Form 3547 Requested.

PAID

Construction

IN THE SOUTH

JULY 1952

GM DIESEL CASE HISTORY No. 519-18

USER: Wissota Sand and Gravel Company, Eau Claire, Wisc.
Firm produces 500,000 tons a year.

INSTALLATION: GM 4-71 Diesel replaced gasoline engine in 1¼-yd. dragline four years ago. Firm also repowered two shovels and a portable crusher with GM Diesels and powers a washing plant pump with a 4-71.

PERFORMANCE: With GM Diesel Power, the dragline loads one-third more per day while costing about half as much to operate. Operator says GM starts easier and permits faster swings with quicker recovery under load.
Repowered crusher produces 25% more and costs 25% less to run.

This Diesel Loads 33% More Gravel

at one-half the fuel cost

You are money ahead when your equipment does extra work each day. But profits really mount when you save on fuel and maintenance at the same time. The General Motors Diesel engine gets more work done in less time because of its faster, more responsive 2-cycle operation—power at every piston downstroke. This quick-starting, smooth-running Diesel fits in about the same space as industrial gasoline engines of comparable power—and provides fuel and maintenance savings of 40% to 70%. Ask your GM Diesel distributor to show you the savings this Diesel can make in your equipment.

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS, DETROIT 28, MICHIGAN

It pays to Standardize on

Write for booklet "A $5,000,000 Horsepower Insurance Policy" that tells you why.

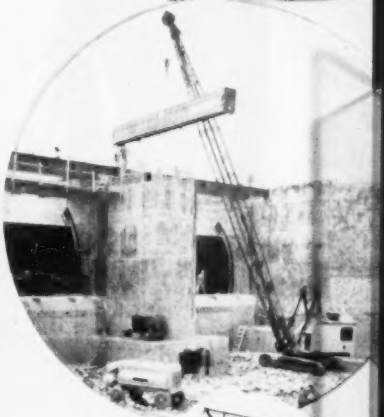
GM
GENERAL MOTORS
DIESEL POWER

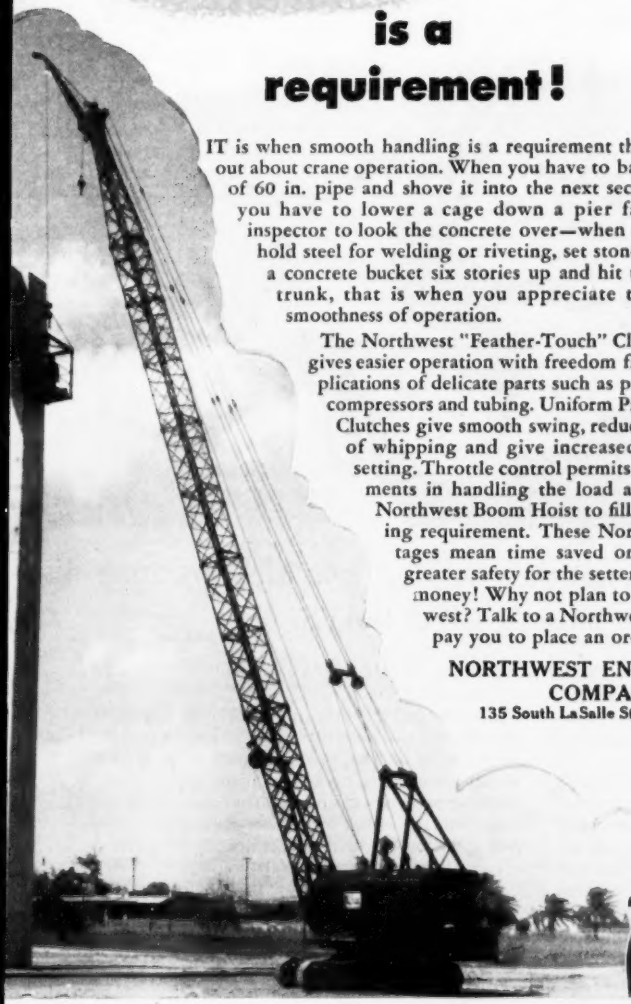
where SMOOTH HANDLING is a requirement!

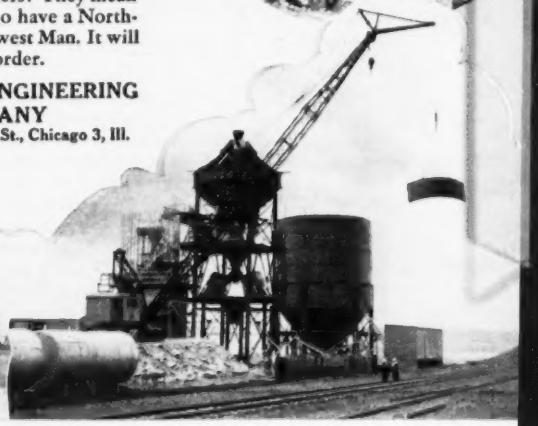
IT is when smooth handling is a requirement that you find out about crane operation. When you have to balance 50 ft. of 60 in. pipe and shove it into the next section—when you have to lower a cage down a pier face for the inspector to look the concrete over—when you have to hold steel for welding or riveting, set stone or balance a concrete bucket six stories up and hit the elephant trunk, that is when you appreciate the value of smoothness of operation.

The Northwest "Feather-Touch" Clutch Control gives easier operation with freedom from the complications of delicate parts such as pumps, valves, compressors and tubing. Uniform Pressure Swing Clutches give smooth swing, reduce the danger of whipping and give increased accuracy in setting. Throttle control permits minute movements in handling the load and there is a Northwest Boom Hoist to fill every operating requirement. These Northwest advantages mean time saved on the job and greater safety for the setters! They mean money! Why not plan to have a Northwest? Talk to a Northwest Man. It will pay you to place an order.

NORTHWEST ENGINEERING COMPANY
135 South LaSalle St., Chicago 3, Ill.







local NORTHWEST sales agents

FLA.—JACKSONVILLE, LAKELAND, MIAMI, ORLANDO, TAMPA, TALLAHASSEE
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GA.—ATLANTA
Tractor & Machinery Co., Inc.
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Fla.-Ga. Tractor Co.

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Woodward-Wight & Co., Ltd.
SHREVEPORT
Construction Machinery Corp.

MD.—BALTIMORE
McClung-Logan Equipment Co., Inc.

N. C.—ASHEVILLE, CHARLOTTE, GREENVILLE, GUILFORD, RALEIGH, WILMINGTON
No. Carolina Equipment Co.

S. C.—W. COLUMBIA
Southern Equipment Sales Co.

TENN.—CHATTANOOGA
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VA.—NORFOLK
Hampton Roads Tractor & Equipment Co.
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Highway and Machinery Supply Co.

W. VA.—CHARLESTON
W. Va. Tractor & Equipment Co.

Successful Contractors Stay Successful with Proved Equipment

But with cement, it's not that easy . . . *and air-entraining cement . . . like a shirt . . . must fit TWO WAYS!*

From size 14-30 to 17-36, shirts come ready-made to fit almost any man. But when you're using air entraining cement, remember—there's only *one* "size"—set by rigid Federal and ASTM specifications. And on many jobs it just won't "fit."

Naturally, you wouldn't buy a shirt that's right around the collar but has sleeves reaching down to your fingertips. And it works the same way when you're ordering cement. Before you'll get air entrained concrete that's perfect, you must make sure of the measure *two ways!* First, determine *how much* air entrainment is right for your particular job . . . and then, the air entraining *effect* of your aggregate, its gradation—and even the temperature of the mix . . . all factors that can change the amount of air actually entrained in your concrete. You've got to be right on *both* counts—to be sure of "form-fitting" concrete!

You may find that air entraining cement measures up perfectly. But more likely you'll discover that it's safer . . . and smarter, to add the *required* amount of a well known air entraining agent with regular portland cement at the mixer. Just remember to use air entraining cement *only* when you're sure . . . and remember, too—you can't buy better regular portland *or* air entraining cement than Hermitage.

* * *

If you have any problems or questions on the use and mixing of air-entrained concrete, the Hermitage Service Engineer will be glad to help and advise you —contact the Hermitage office.

Hermitage Cements

Hermitage Portland Cement Company

American Trust Building, Nashville 3, Tenn.

Portland • High Early Strength • Air Entraining • Masonry

Contents

The CONSTRUCTION magazine is published in four editions: C edition is for North Carolina and South Carolina; S edition, Alabama, Florida, Georgia and Tennessee; N edition, Kentucky, Maryland, Virginia and West Virginia; W edition, Arkansas, Louisiana, Mississippi, Missouri, Oklahoma and Texas.

Construction

JULY 1952

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Managing Editor

WM. E. McCORD
Advertising Manager

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BLUE BOOK OF SOUTHERN PROGRESS

BRANCH ADVERTISING OFFICE
R. S. Kendrick, 1438 Clairmont Road, Decatur, Ga. Telephone: Crescent 4577

Industrial Projects Cited on Southern Lines

The approximately 8,000 miles of lines of the Southern Railway System traverse an area where industrial construction has been marked with large and important additions during the past year, it is stressed in the company's annual report, which reads in part:

Production of primary aluminum began December 11, 1951, at the new aluminum plant of the Kaiser Aluminum & Chemical Corp. built on a tract of 280 acres on a subsidiary's line at Chalmette, near New Orleans, La., which will have an ultimate capacity of 200,000 tons of aluminum per annum. When completed, this plant will have cost $120,000,000.

The new Appliance Park of General Electric Co., now under construction on the company's line a few miles east of Louisville, Ky., is expected to cost around $225,000,000. It is anticipated that the first unit, being built at a cost of $14,000,000, will go into operation in May, 1952. When complete, probably in 1956 or 1957, this entire development will produce about 300 carloads of rail traffic per day, in and out, and employ a total of 16,900 workers.

Discovery of salt on the company's lines in South Alabama is beginning to prove its far-reaching industrial potentiality.

Mathieson Chemical Corp. has under construction on the company's line at McIntosh, just north of Mobile, Ala., a chemical plant to manufacture chlorine and other products from this salt. It is reported this project will cost in excess of $10,000,000.

Establishment of additional plants to manufacture industrial chemicals in the same area is under consideration.

Also estimated to cost more than $10,000,000, there is a new rayon manufacturing plant being build by Courtaulds, Ltd., on a 650-acre site in Alabama, also on the company's Mobile Division, some of the raw materials of which are manufactured from salt.

Three miles north of the rayon plant, ground was broken in July, 1951 for erection of a new $30,000,000 steam-electric power plant by the Alabama Power Co. Initial capacity will be 250,000 kilowatts in two generating units. The first unit is expected to be in operation late in 1953 and the second in 1954.

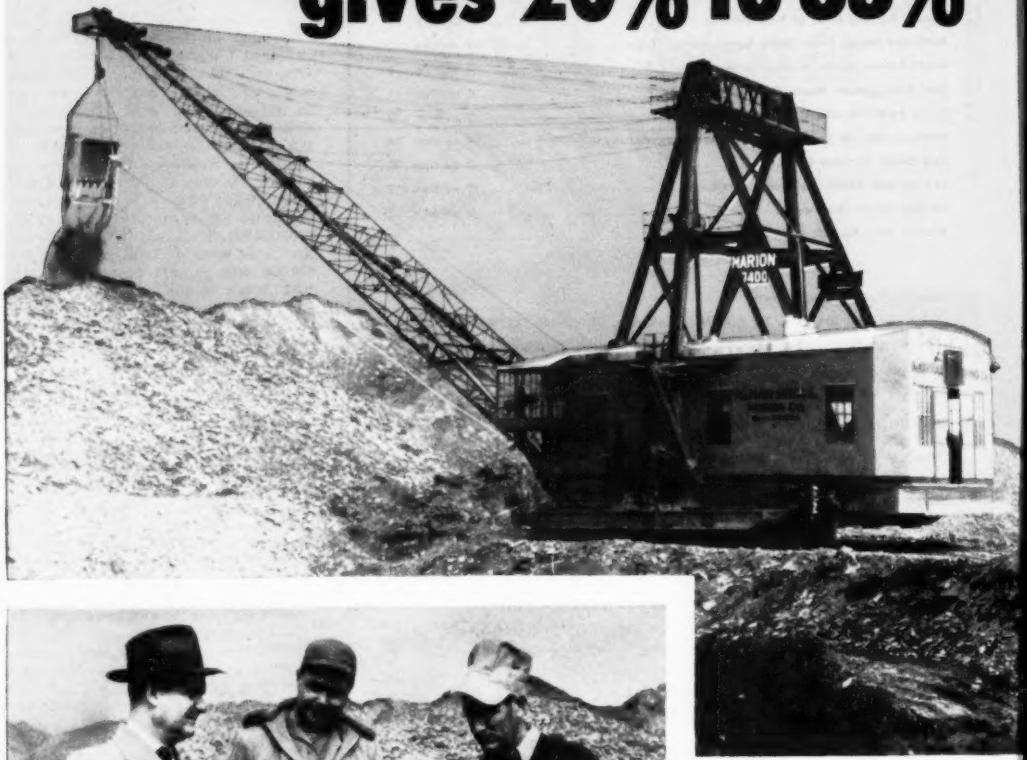
Ground has been broken for a multi-million dollar missiles plant of approximately 350,000 square feet of floor space on a site of 100 acres of land on the company's lines in East Tennessee. A division of the same company has acquired property in East Durham, N. C. Each of these plants will employ about 1,500 workers.

Construction of a new $15,000,000 plant to manufacture anti-tank and anti-aircraft guns, containing approximately 200,000 square feet of floor space in Tennessee, is well under way. This plant will give employment to 750 people.

Furthering the diversification of industry in the South is a plant being built

(Continued on page 48)

New American Tiger gives 20% to 83%

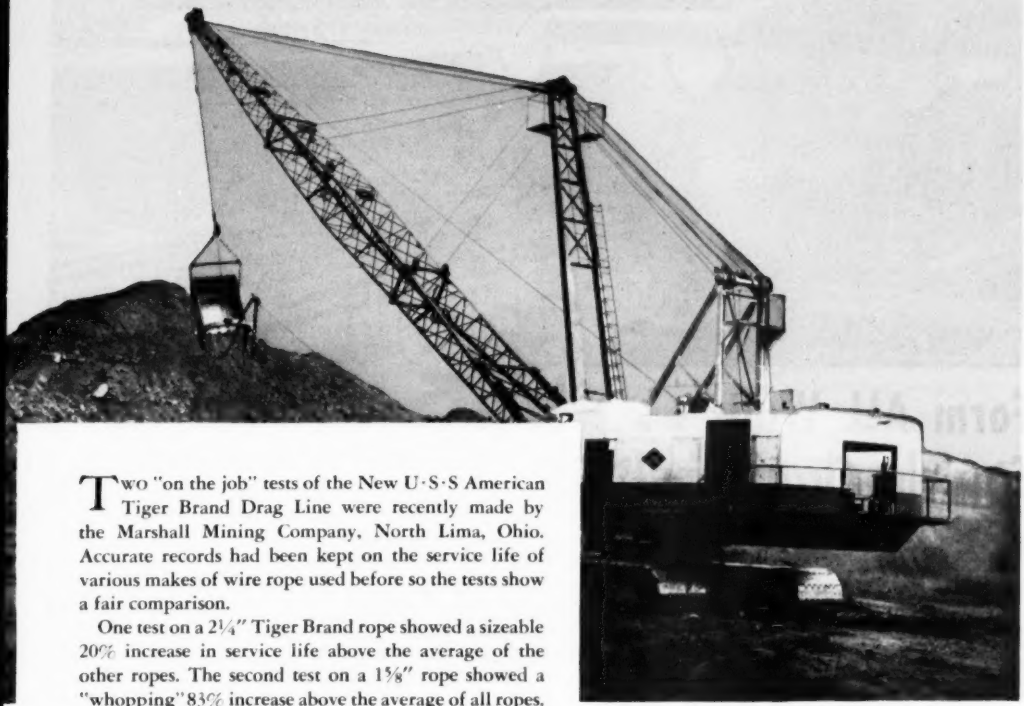


SAVES MONEY AND TIME—INCREASES PRODUCTION. This new Tiger Brand Drag Line Rope quickly pays for itself through increased life and greater production. Try it next time you have to replace your drag rope.

20% INCREASE IN WIRE ROPE LIFE. When this 14 cu. yd. drag line was equipped with the new Tiger Brand 2¼" Drag Line, the average service life of the rope was increased 20% over other brands tested.

USS
AMERICAN
TIGER BRAND
WIRE ROPE
UNITED STATES STEEL

Brand Drag Line increase in service life



Two "on the job" tests of the New U·S·S American Tiger Brand Drag Line were recently made by the Marshall Mining Company, North Lima, Ohio. Accurate records had been kept on the service life of various makes of wire rope used before so the tests show a fair comparison.

One test on a 2¼" Tiger Brand rope showed a sizeable 20% increase in service life above the average of the other ropes. The second test on a 1⅝" rope showed a "whopping" 83% increase above the average of all ropes. Digging conditions in all cases were the same.

This new Tiger Brand Drag Line was designed especially to resist the severe operating conditions imposed by this class of service.

The use of this new rope on your drag line will mean substantial savings in your wire rope costs. It will cut your down time and help to keep machines at top capacity.

DRAG LINE LIFE INCREASED FROM 600 HOURS TO 1100 HOURS—83%. The best service on this drag line using 1⅝" rope averaged 600 hours for other brands of rope. But with the new U·S·S Tiger Brand Rope, service life jumped to 1100 hours—almost double the previous average.

U·S·S AMERICAN TIGER BRAND WIRE ROPE

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Excellay Preformed

UNITED STATES STEEL

Fast Job Starts... LOWER COSTS

Elmira Sewage Treatment Plant, Elmira, New York
General Contractor: Corigliano Brothers, Ossining, New York
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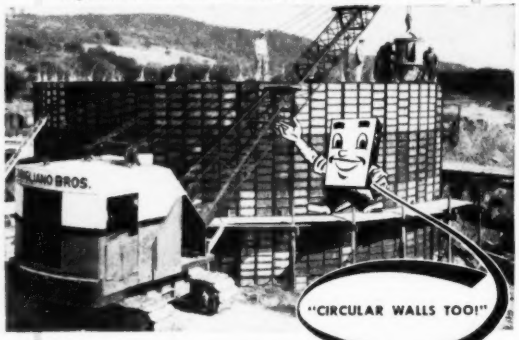
Form ALL Walls . . . . Straight, Circular and "Y" with ONE System!

- **FASTER JOB STARTS . . .** UNI-FORM Panels are ready to use when they reach the job.
- **AUTOMATICALLY ACCURATE . . .** Simple mechanical assembly
- **EASIEST FORM ERECTION . . .** Lock into rigid, integral unit
- **MINIMUM ALIGNMENT and BRACING . . .** Required on 1 SIDE ONLY

SAVE TIME . . . LABOR . . . MATERIAL

Write today for full details on Universal's "Sewage Treatment Plant Concrete Forming Package"... UNI-FORM Panels, "Y" Wall Forms, FREE Engineering and Field Service. It's designed to make money for you!



Standard UNI-FORM Panels form the aeration tank. Alignment and bracing on *inside only* give clean, safe outside working area.

UNIVERSAL FORM CLAMP CO.

Concrete Form Specialists Since 1912

GENERAL OFFICES AND FACTORY
1238 N. KOSTNER • CHICAGO 51, ILLINOIS

OFFICES AND WAREHOUSES

SAN LEANDRO, CALIF.	2051-9 Williams St.
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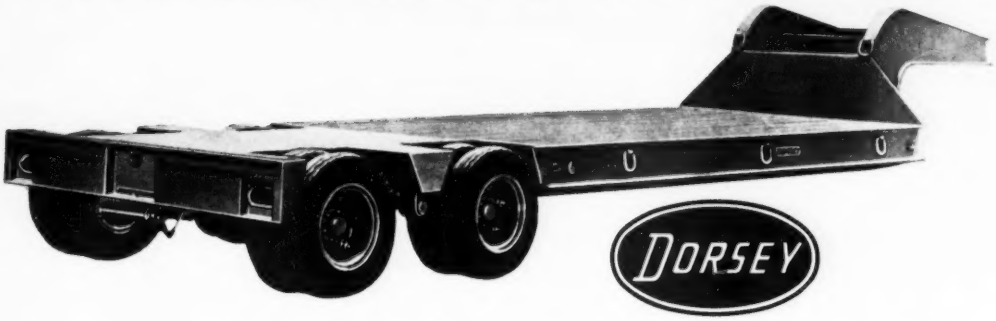
Service Wherever You Build . . . Coast-to-Coast

Engineered for Dependability Under Rated Loads...

WITH STRENGTH TO SPARE!



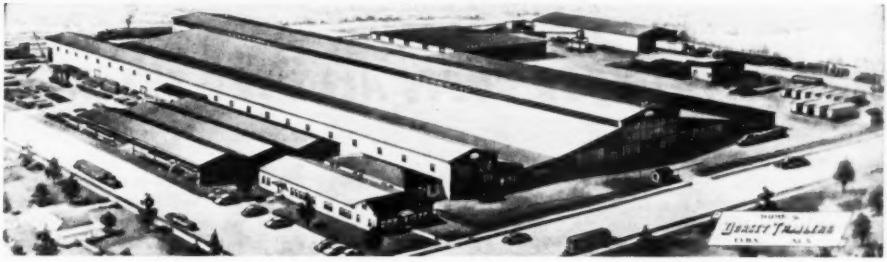
On every continent construction men have learned to depend on Dorsey Low Bed Trailers under the toughest conditions . . . because the rated carrying capacity of a Dorsey is purposely conservative.

Beam strength, tire capacity, structural members—all are engineered to provide a margin of safety when equipment is subject to unusual strain. On tough jobs and over rough terrain Dorsey's safety factor is all-important! Reserve strength prolongs life and makes for dependable, trouble-free operation.

Lowest practical loading height is a feature of each Dorsey model.

Above: Model MTS, in capacities 15 to 35 tons. Three other models from 15 to 75 tons, with up to 100 tons on special orders. Tilt-to-load models up to 10 tons. For special sizes and designs you will find Dorsey geared to fill your requirements with maximum economy.

NO EXTRAS TO BUY for normal basic operations. The base price of a Dorsey includes equipment for most applications. Optional items are available for special requirements.



The Dorsey plant—one of the world's major producers of trailers. Here thousands of precision-built trailers roll off modern assembly lines each year. A system of rigid inspection at each stage assures Dorsey Dependability.

LET YOUR DORSEY DISTRIBUTOR SOLVE YOUR HEAVY-TRANSPORTATION PROBLEMS — DORSEY ENGINEERS ARE AT YOUR SERVICE!

DURABLE DEPENDABLE DORSEY TRAILERS

ELBA, ALABAMA

new arrival

ON THE CONSTRUCTION SCENE

P&H MITI-MITE

READY TO CUT YOUR COSTS ALL OVER THE MAP

Here's the light-footed, heavy-handed, all-round performance that means less time and lower costs on 101 different jobs — near and far! It's the MITI-MITE — sensational new machine for truck service — it brings you 100% automotive design — and an amazing new idea in power application.

Choose your own make of truck of suitable capacity — new, used, or rebuilt. MITI-MITE gives you the extra stability that means greater work capacity.

Talk about maintenance! You never had it so easy! All gears fully encased, running in oil; antifriction bearings on all shafts and drums virtually lubricated for life.

FULLY CONVERTIBLE — for service as shovel, crane, dragline, trench hoe, clamshell or magnet crane with large machine-type attachments. See your P&H dealer for full information.

Write today for Bulletin TX-127

P&H TRUCK CRANE DIVISION
HARNISCHFEGER CORPORATION
Milwaukee 46, Wisconsin

See your P&H *Dealer!*

MITI-MITE

Above—The new "Anniston Tube Works" of General Electric Co. represents an investment of more than $6,000,000. Robert & Company Associates, of Atlanta, are the architects and engineers; Siegfried Construction Co., Inc., of Buffalo, N. Y., the general contractors; Andrew, Dawson, Shenesy, Anniston, the associate contractors.

G. E. Builds Electronics Plant In The Heart Of Dixie

by
F. A. Dieter
Resident Engineer
General Electric Realty Corporation

With official dedication services held June 12, construction of an electronic tube plant for the General Electric Co. is essentially complete at Anniston, Ala. The completely integrated plant is considered to be the most modern of its type in the world. It will produce receiving tubes for radio, television, and electronic equipment.

Known as the General Electric Co.'s "Anniston Tube Works," it represents an investment of six million dollars for land, buildings and equipment. The attractive plant is located on the knoll of a large tract of land, bounded by two U. S. highways and the Southern Railroad. From its lofty position the main building overlooks the surrounding Appalachian foothills.

Last summer, representatives of the General Electric Realty Corp. observed the distinct advantages offered by the site in the way of transportation and availability of water, sewage, power, and natural gas facilities, but there was doubt as to the practicality of locating a plant amid such hilly country.

Preliminary test borings, however, indicated that it would be economically feasible to level and grade the rugged terrain over an area required for the project. This conclusion was later borne out in the site preparation, when over 200,000 cubic yards of earth were moved and compacted without encountering any rock.

The main plant comprises production areas, service shops, utility and machinery rooms, chemical laboratory, boiler room, storage and receiving areas, general offices, cafeteria, and dispensary, all totaling in excess of 160,000 square feet.

The single-story manufacturing building is 660 feet long, has a ceiling height of 28 feet, and steel roof trusses spanning up to 76 feet. Centralized ultra-modern mezzanine lavatories afford unobstructed production flow lines. The walls of this building are constructed of insulated corrugated cement asbestos siding above the sash with hollow clay structural tile from floor level to window sill height. There is a continuous band of commercial projected sash around the building perimeter with heat absorbing glass in the east and west elevations. Floors throughout the plant are surfaced with asphalt tile and the steel roof decking has built-up roofing applied over insulation.

Construction of the building frame is unique in that the main framing is composed of forty-year-old steel salvaged from a structure which was being demolished. Because of schedule requirements for early completion, this unusual expedient was considered necessary in view of the difficulties of securing early government allotments for mill steel at that time. The considerable delay would have been necessary to obtain new structural steel during a period when all fabricating shops were overloaded. Utilization of the second-hand steel enabled the plant to go into operation four months after field erection started, considerably earlier than would have been possible had new material been insisted upon.

Automobiles and buses have easy access to the plant entrance and parking lot by a two-lane paved road branching off the state highway. Shipping and receiving are adequately handled by a railroad siding and a paved road encircling the plant. The dust problem has been alleviated by grassing the entire site, except for roadway and parking lot areas.

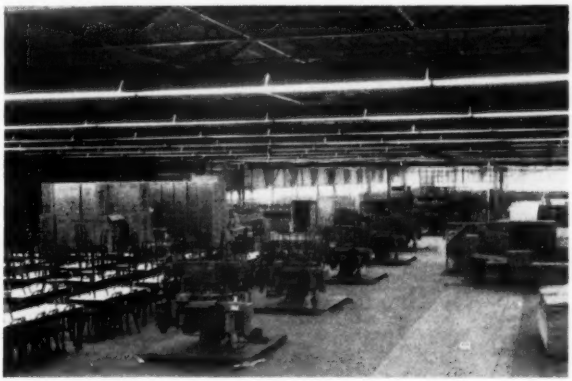
Outside structures include pump houses, water reservoir, natural gas metering station, cylinder hydrogen and oxygen manifold stations, propane tanks and mixing house, bus waiting station, and guard house.

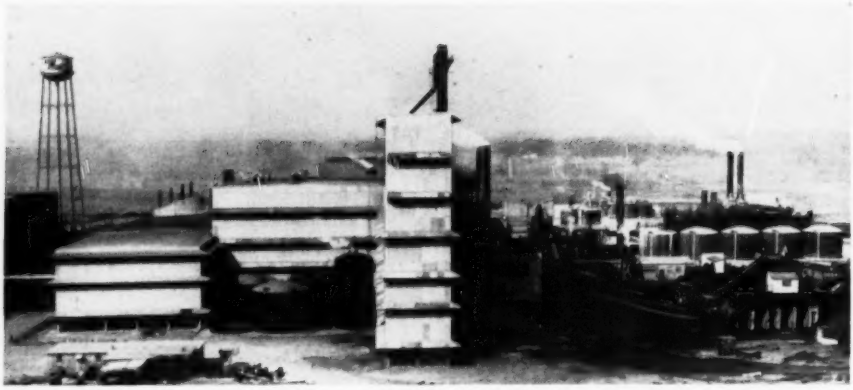
At the Alabama Power Co. outdoor substation, the 44-kilovolt primary power feed is stepped down to 4160 volts for the four secondary feeds, each protected with General Electric gang operated oil fused cutouts. There are two separate overhead yard circuits for the pump houses and yard lighting. The other two underground power circuits have outdoor electronic voltage regulators and they are brought through aluminum lead-covered cable to load centers mounted on a mezzanine platform inside the manufacturing building.

From the inside substations, interlocked-armored aluminum cable, supported on racks, distributes the power to 2400 lineal feet of 480-volt A.C. and 220-

(Continued on page 14)

Below—Interior view showing wall and roof design and the fluorescent lighting arrangement.





Above—View of new construction known as Number 2 pulp mill at the Pensacola, Fla. "Kraft Center" of the St. Regis Paper Co. Daily capacity is 575 tons of pulp. At right is shown conveyor from barking drums to chippers. In the background is the lime recovery installation. At the left is a 150-foot water tower, which is part of the fire-fighting equipment. This tank stores 100,000 gallons of water.

St. Regis Finishes Machine, Expands Facilities

St. Regis Paper Co. announces that the new paper machine at the company's "Kraft Center" at Pensacola, Fla., capable of producing approximately 100,000 tons of kraft paper and board a year, is now in regular production. The pulp mill at that center was also expanded, and completion of the program at Pensacola has raised the company's paper and board capacity there to 265,000 tons per year.

The company also reports "on-schedule" progress in the construction of its new kraft paper and board mill, including pulp manufacturing facilities, at Jacksonville, Fla., with present indications that production will start in the fourth quarter of this year. This mill, with a capacity to produce 100,000 tons of kraft paper and board a year, when completed, will bring the annual kraft paper and board capacity of St. Regis to 560,000 tons.

This southern expansion program, now nearing completion, represents an important part of a long-range program projected by the company that had as its aim complete integration of the Kraft Division. In anticipation of which, the company has acquired over the years a permanent source of wood supply in Florida, Alabama, Georgia and Mississippi.

The new machine at Pensacola (No. 4) is designed to manufacture paper with a trim of 210 inches. Built by Bagley & Sewall Co., Watertown, N. Y., the machine has a wire 228 inches wide and 120 feet long for the fourdrinier section and was designed for a speed of 2400 feet per minute.

With the first paper produced on the new No. 4 machine, the major expansion of the kraft pulp, paper and board capacity of the St. Regis Paper Co.'s "Kraft Center" at Pensacola, commenced late in 1950, was largely completed. The expanded facilities of the pulp mill and the power department had been completed and in operation before that date.

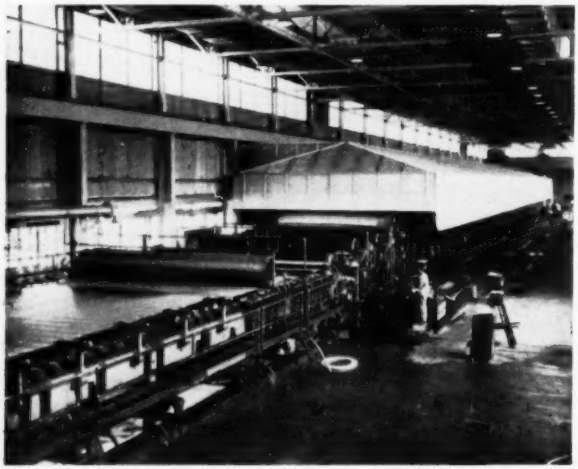
The special machinery, equipment, and structures to house them, to provide this added production of kraft paper and board products, form practically a complete and independent mill unit, built adjacent to the existing structures and facilities of a 250-ton-per-day capacity pulp and paper mill unit originally built on a site in Cantonment, (15 miles north of Pensacola) by and for the Alabama Pulp and Paper Co. in 1947, which produced its first paper in March, 1948.

In December of 1948, the physical properties of the Alabama company and the Florida Pulp and Paper Co., whose pulp and paper mill had been operating on an adjoining site in Cantonment, were merged with and into the St. Regis Paper Co., and the paper-making operations of the former Alabama Pulp and Paper Co.'s mill have been carried along since that time under the St. Regis Paper Co.'s direction and control, and identified as Mill No. 2 with No. 3 paper machine.

The paper machine is a fourdrinier machine with a wire 228 inches wide and 120 feet long for the fourdrinier section,

(Continued on page 18K)

Below—General view of the new Number 4 paper machine from the wet end showing part of the fourdrinier wire and machine tender at the control station. Entire length of the machine from slice to and including the re-winder is approximately 415 feet. The machine trims to 210 inches and is designed for an ultimate speed of 2,400 feet per minute. Rated capacity is 275 tons daily, or approximately 100,000 tons annually of kraft paper and board. This will increase the total annual tonnage at "Kraft Center" to 265,000 tons.



Money Making ROAD BUILDERS for Harris County!

Harris county's DW10's haul topsoil for a new school site.

Their No. 12 Motor Grader quickly brings the fill up to grade, working close behind the DW10's.

Two DW10's Free 6 Trucks and Loader for other Job! . . .

Down in Harris county, they've found a money-saving way to build and maintain roads — with "Caterpillar" DW10's!

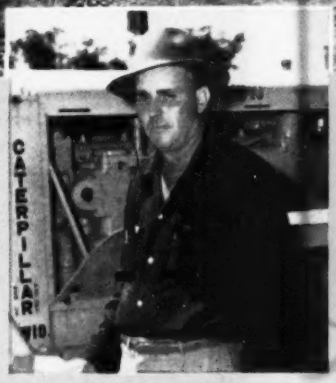
By using two of these fast dirtmovers, they have freed 6 trucks and a "Traxcavator" Shovel for use on other jobs. The DW10's, a D7 pusher and a No. 12 Motor Grader build roads twice as fast as formerly —at far less cost!

Harris county found long ago that "Cat" equipment pays dividends. Over 20 years ago they bought a Sixty-Five Tractor from Yancey Bros. Co. The long-lived performance of their first tractor helped convince them that "Caterpillar" machines were the best for their roads.

Warden Jim Evans, who has been with the county for 15 years, says, "I'll take 'Cat' in preference to any other road machinery."

To keep up with over 1,000 miles of roads, Harris county uses this "Cat" fleet—three Motor Graders, two D7 Bulldozers, the two DW10's with 10-13 yd. No. 15 Scrapers and a D4 "Traxcavator" Shovel.

We'll be happy to show you how "Cat" machinery will give dependable, money-saving performance in *your* county.



WARDEN JIM EVANS
"I'll take 'Cat'."

Yancey Bros. Co.

Phone EL-3741
1540 Northside Drive
ATLANTA, GA.

Phone 3-2241
1781 Fifteenth St.
AUGUSTA, GA.

"Caterpillar"
• Sales
• Service
• Repairs

"CAT" DW10's also available with new self-loading No. 10 Scrapers!

G. E. Builds

(Continued from page 11)

volt A.C. Trumbull bus duct. In addition, a 120-volt, two-conductor, D.C. bus duct is run from the Utility Room to the factory area for the tube-test requirements.

A grid of slimline fluorescent fixtures, with 265-volt ballasts, furnishes a minimum of 35-foot-candles general lighting in the production areas while localized fluorescent lighting at assembly lines gives intensities well over 100-foot-candles. In the manufacturing building alone over 8000 lineal feet of fluorescent fixtures are suspended by messenger cable. The office and dispensary, adjacent to the manufacturing building, have low-voltage remote-control switching for the fluorescent lighting and underfloor fiber duct for the office telephone and electrical outlets.

Mechanical work on this project was more intricate than usually found in an industrial plant of this size. Factory ventilation presented a difficult problem since a tremendous amount of heat and unpleasant fumes are released by the gas flames at the numerous glass-forming and vacuum exhaust machines. An elaborate system of supply air blowers and exhausters, in conjunction with the high ceiling, help to dissipate the heat generated and supply a sufficient quantity of filtered make-up air to maintain the building under positive air pressure.

Process piping consists of over six different types of welded gas mains, three types of water mains, as well as the steam and condensate service mains. Both for safety of personnel and for operational guidance, these mains are all readily identified by color code. During construction, the gas mains were thoroughly cleansed with chemical solutions and after erected, purged and pressure-tested with nitrogen.

A natural gas feed line has been run to the plant from the Alabama Gas Corporation's booster station which is in close proximity to the site. In addition, the plant has a stand-by propane system for emergency use. The main boilers are equipped to burn either natural or propane gas.

A closed, recirculated water system keeps make-up requirements for the softened and treated cooling water at a minimum. The pump houses have vertical centrifugal pumps for spraying, cooling water distribution, and fire protection while the 250,000-gallon gunite reservoir serves the dual function of spray pond and secondary source of fire protection. A recently installed 24-inch-diameter water main from the City of Anniston is an excellent source for fire and process water.

The office and dispensary are completely air-conditioned for comfort. Air is circulated through concealed ductwork and the diffusers are mounted in the suspended acoustical ceiling.

Process air-conditioning for the Cathode Spray Room is supplied by a General Electric Type HDH 200 central plant air-conditioner. This is an indirect system, with automatic temperature and humidity control, using Freon (F-12) as the primary refrigerant and chilled water as the secondary refrigerant. The 100 per cent make-up air for this room is passed through an electronic air filter to insure a dust-free atmosphere for the spraying of the electronic tube cathodes.

Robert & Co. Associates of Atlanta, Ga., were the architects-engineers, Siegfried Construction Co., Buffalo, N. Y., associated with Andrew, Dawson & Schenesey, of Montgomery and Anniston, Ala., were the general contractors. Selection of the site and complete arrangements for the design and construction of the project were handled by the General Electric Realty Corp.

Modernization Completed at Birmingham Paper Plant

Modernization of the boiler system at the Birmingham Paper Co., Birmingham, Ala., has been completed by Rust Engineering Co. of Birmingham and Pittsburgh.

New facilities were installed providing for gas firing instead of coal, and boiler feedwater, steam and condensate systems were thoroughly modernized. Corrugating machinery was also relocated.

The changes at the plant which manufactures paper containers of all types were designed to give the Birmingham Paper Co. a more efficient production of steam at low pressures.

You make more money with...

There's one big reason why you make more money with DW21's. The reason: "Caterpillar" quality manufacture.

Quality manufacture means extensive research and practical engineering...careful control of quality materials from source to production. "Caterpillar" quality gives you more value for your investment—more profit from each dollar invested. It results in the ability of DW21's to work thousands of hours without costly repairs, with a minimum of downtime, and with lower depreciation.

Get all the facts *now*—find out how "Caterpillar" DW21's can produce more profit on your job . . . just give us a call!

Loading... *"Caterpillar's" live-loading action quickly boils a 20-heaped yard load (23 with sideboards) into the No. 21 Scraper! Here's a DW21 on a road job of Hugh McMath Construction Co.*

YOUR "CATERPILLAR" DEALER

BURFORD-TOOTHAKER TRACTOR CO.
Montgomery and Mobile, Ala.

CARLTON CO.
Albany, Ga.

GIBBS CORP.
Jacksonville, Ocala, Orlando, Tallahassee, Fla.

R. L. HARRIS, INC.
Knoxville and Chattanooga, Tenn.

J. D. PITTMAN TRACTOR CO., INC.
Birmingham, Decatur and Tuscaloosa, Ala.

SHELLEY TRACTOR & EQUIPMENT CO.
Miami and Tampa, Fla.

THOMPSON & GREEN MACHINERY CO., INC.
Nashville, Tenn.

CATERPILLAR" DW21's

HAULING... *the DW21 hits its stride at 20 MPH—spreads quickly and cleanly on-the-run. Positive steering control and oversized air brakes insure operator and machine safety. This unit is owned by Harris Construction Co.*

VISIBILITY—UNLIMITED...

operator has full view of road, load and cutting edge from his air-foam seat mounted on springs and hydraulic snubbers. Fast acting controls are within normal reach!

FASTER, SHORTER TURNS...

only 35 *feet* required for non-stop turns... full 90° turns in each direction. Exclusive "Caterpillar" steering system does the work with the operator leading the turn. Safety device eliminates jackknifing!

MORE POWER...

new "Cat" 275 HP (ASME rating) engine gives 13.75 HP per yard of heaped capacity! Sensitive governor meets load changes instantly ... plenty of lugging ability for grades!

MATCHED DESIGN...

engine-tractor-scraper built specifically for each other... all component units built by "Caterpillar" ... proved by hundreds of users on a variety of jobs.

ONE SOURCE FOR SERVICE...

one call gets skilled service and parts for engine, tractor, scraper—or any other part of the machine. Expert assistance on application as well as maintenance service.

FREE MAINTENANCE GUIDE...

for "Cat" wheel-type Tractors in the easy-to-read cartoon style—for users, mechanics, operators. Send us a post card requesting *your* free copy or see our representative on his next call.

Connors Steel Opens Atlanta Sales Office

To better serve its customers in the Atlanta area Connors Steel Co., a division of H. K. Porter Co., Inc., Birmingham, has opened a new sales office at Room 103, 1145 Peachtree Street, N. E. Atlanta, Ga.

Establishment of this office is in line with Connors' policy of expanding and improving its services to its many customers in this area.

William J. Califf, Jr., will be in charge of the new office and will handle sales of all products manufactured by Connors. Mr. Califf has been associated with Connors in its sales department for many years.

National Container Project Underway at Valdosta

At the present rate of site preparation work for the 500-ton per day kraft pulp, board and paper mill National Container Corp. is building at Valdosta, Ga., construction may start in July on the foundations.

Clearing and outside grading of the 100-acre site is now going forward. As part of this initial work, Merritt-Chapman & Scott Corp., the builder, is constructing one and one-half miles of sewers, approximately a mile of macadam roadway, 10,000 square yards of hard top parking area, and a mile of seven-foot steel mesh fence.

The company is building a six-and-one-half mile spur from the mill site to the tracks of the Georgia, Southern & Florida Railroad (Southern Railway), and a tie-in with the Georgia & Florida Railroad is also being constructed.

Other phases of work now under way include the construction of a project field office that subsequently will be turned over to serve as one of the mill's permanent facilities. Built of jumbo face brick, with concrete slab floor, it is of wood frame and steel sash construction. A machine shop of prefabricated steel construction and a Diesel-powered generator that similarly will be turned over for permanent use also are now under construction and installation.

All construction material and equipment for the mill has been ordered and is scheduled for delivery as needed.

An earlier Merritt-Chapman & Scott project was National's Jacksonville, Fla., kraft pulp and board mill, originally built in 1937 for a 200-ton per day capacity and subsequently enlarged to its present daily rate of more than 400 tons.

Joy Distributor Named for South Florida

Joy Manufacturing Co. has appointed Florida-Georgia Tractor Co., of Miami, as distributor of its construction equipment in southern Florida.

Florida - Georgia maintains modern sales and service facilities at 3139 N. Miami Avenue, Miami, Fla., and employs a 25-man staff of construction equipment specialists. This new dealership covers the entire Joy construction line, which includes stationary and portable air compressors, rock drills, paving breakers, spaders, tampers, and portable hoists.

$26,437,000 Gulf Program Slated in Three Years

Gulf Power Co. has issued $7,000,000 first mortgage bonds to provide a part of the funds required for construction or acquisition of permanent improvements, extensions and additions to its system.

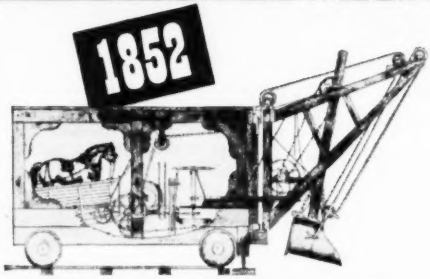
The company owns and operates the Pensacola steam-electric generating station with two units, each rated at 22,500 kilowatts, and a third 30,000-kilowatt unit now in the course of construction and scheduled for completion soon.

A new plant is under construction at River Junction, where the first of two 40,000-kilowatt units will be placed in service late this year. The second unit will be finished a year later.

Total construction expenditures for 1952, 1953 and 1954 are eestimated at $26,437,000, of which approximately $14,450,000 will be laid out this year, $9,219,000 in 1953 and $2,768,000 in 1954.

Expenditures are estimated as follows: $3,436,000 for completion of the third 30,000-kilowatt unit at Pensacola; $11,005,000 for the new River Junction project; $3,838,000 for transmission line and substation additions; $5,719,003 for distribution system additions.

100 years of progress in OSGOOD shovels



OSGOOD'S 2-horse power excavator

of 100 years ago was powered by a team of horses on a treadmill inside the machine. Although crude by today's standards, this excavator embodied the four principal functions of a modern power shovel; (1) Crowd (2) Hoist (3) Swing (4) Travel. Then, as now, the name OSGOOD stood for sound engineering.

Progress in excavating equipment has been rapid during the past 100 years, but one thing has not changed. Now, as in 1852, the most efficient, most advanced earth-moving equipment is built by OSGOOD — oldest name in the power shovel and crane industry.

Through the years, OSGOOD has been noted for its unparalleled engineering leadership, and today's OSGOOD machines are unequalled in ability to increase your profits.

You owe it to your future to investigate the many modern OSGOOD features designed to increase work capacity, reduce maintenance, and cut down-time. Find out why OSGOOD shovels are setting new production records on jobs from coast to coast. Write today.

PCSA

EQUIPMENT DESIGNED WITH YOUR PROFIT IN MIND

9214

DISTRIBUTORS

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STATHAM MACHINERY & EQUIPMENT CO.
671 Ford Place, N.E.
Phone: Elgin 2661

BIRMINGHAM
ARMSTRONG EQUIPMENT CO.
4601 1st Ave., N.
Phone: 9-2134

CHATTANOOGA
BURTON FRANKLIN CO.
1916 Dayton Blvd.
Phone: 6-0615

KNOXVILLE
CROWELL ENGINEERING & SALES CO.
5400 Kingston Pike
Phone: 8-1338

MEMPHIS
UNITED STEEL PRODUCTS CO.
1534 Texas Street
P. O. Box 4111

MIAMI
550 N.W. 6th Ave.
H. E. MOREDOCK COMPANY
Phone: 82-6433

NASHVILLE
BUCHANAN-ROONEY EQUIPMENT CO.
Phone: 6-2114

Manager Named for Rome G. E. Plant

David B. Lawton, former assistant manager of manufacturing of the General Electric Company's transformer operations, has been named manager of the company's newly-planned transformer manufacturing plant at Rome, Ga.

The appointment was announced by W. S. Ginn, general manager of the power transformer department, transformer and allied products division, Pittsfield, Mass. Announcement that the company will build at Rome the new multimillion dollar plant, providing employment for about 1,700 persons, was made May 23.

Mr. Lawton joined the General Electric Company at the Schenectady Works in 1929 in the rate department of the former industrial control division. He went to Pittsfield in November, 1947, as superintendent of the former Distribution Transformer Manufacturing Division and in August, 1951, was appointed assistant manager of manufacturing.

Hess Elected V. Pres. of Rust Engineering

R. L. Hess, Jr., has been elected a vice president of Rust Engineering Co., according to S. Murray Rust, Jr., president. He was formerly Secretary of the company.

A Princeton graduate, Mr. Hess was admitted to the bar in Allegheny county and the Supreme Court of Pennsylvania after attending law schools of the University of Virginia and Duquesne University where he received his law degree.

He came with Rust in 1937 as assistant to the secretary, and was appointed assistant treasurer in 1941. In 1946 he was named secretary to succeed the late Ralph B. Baldridge, and in 1951 was elected to the board of directors.

A native of Indiana, Pa., Mr. Hess is married and lives at Coraopolis Heights, Pa.

Progress Reported in Mobile District

Four large dams and several waterways and shore protection projects are in various stages of completion in the Mobile District of the Corps of Engineers, according to an announcement by Lt. Col. Sidney T. Martin, executive officer of that office. The projects and their status are:

Altoona dam, Etowah River, near Cartersville, Ga.: Virtually complete. Operations building approximately 95 per cent complete. Contract for construction of utility building, a floating boat house and sanitary facilities awarded June 17, 1952, to the Stancil Construction Co., of Jasper, Ga. Construction of the few other minor items still remaining to be done will be delayed indefinitely due to the continued national emergency.

Jim Woodruff Lock and Dam, Apalachicola River, near Chattahoochee, Fla.: Overflow dike on east bank, and lock and fixed-crest spillway on present west bank completed. Last major construction contract, that for the gated spillway, powerhouse, and switchyard, about four per cent complete. Clearing for the reservoir scheduled to begin in fiscal year 1953.

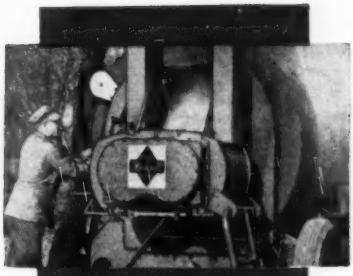
Demopolis Lock and Dam, Tombigbee River, below Demopolis, Ala.: Main construction contract for lock, dam, and appurtenances, delayed by difficulties in procuring steel sheet piling and by high water, now approximately five per cent complete.

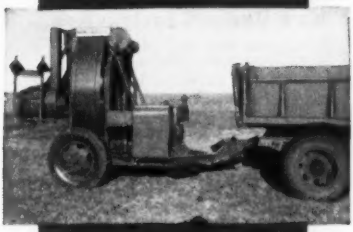
Buford Dam, Chattahoochee River, near Buford, Ga.: Saddle dike and spillway on left bank completed. Contract for excavation of forebay, tunnels, and tailrace, and for construction of two right bank saddle dikes and an access road, delayed by lack of funds, now approximately 44 per cent complete.

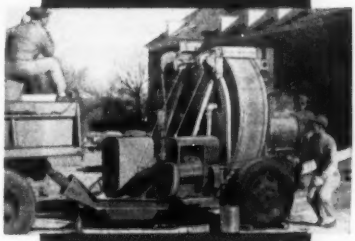
Pearl River Waterway, Mississippi and Louisiana: Last construction contract, for two small dams known as Bogue Chitto and Pools Bluff Sills, awarded to Texas Construction Co., February 28, 1952, now about three per cent complete and scheduled for completion in March 1953. Channel rectification between Pools Bluff and Bogalusa and a considerable amount of delayed maintenance in lower river and canal sections scheduled for low water season of 1952.

Black Creek, Gadsden, Ala.: It is expected that all work on this project will be completed on or about June 30, 1952.

Old Town Creek, near Nettleton, Miss.: It is expected that all work on this project will be completed on or about July 15, 1952.







. . . THE NEW B-G Mixall

MIXES ALL THE HOT PATCH YOU NEED, ANY TIME, ANYWHERE, ANY WEATHER

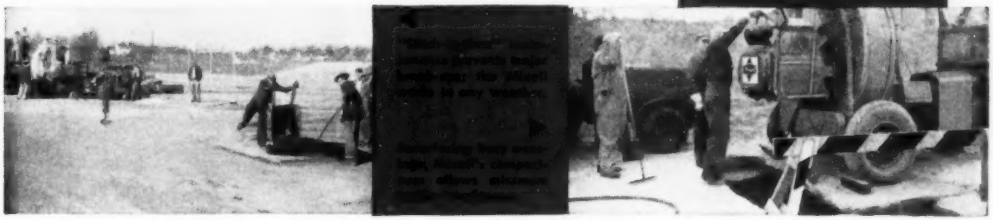
Now, the new Barber-Greene Mixall gives you the opportunity to offer high quality bituminous paving for driveways, sidewalks, service stations, industrial plants, parking lots . . . and other "black top" jobs at new low costs.

The Mixall, a completely new, compact and portable small-job maintenance and paving mixer, will produce up to 5 t.p.h. of any type hot mix . . . up to 10 t.p.h. of cold mix . . . will produce low slump Portland cement mixes. Built to be towed behind the aggregate truck for on-the-spot mixing, the Mixall is just as well suited for central plant or stock pile operation. The Mixall can work in any weather . . . even drying frozen aggregates.

Think of what you could do with the new B-G Mixall in your territory. Then see the Mixall at your first opportunity . . . or write for full information.

THE ONLY SMALL JOB MAINTENANCE MIXER WITH...

- **ROTARY DRUM DRYING:** The same principle used in largest B-G Continuous Dryers.
- **TWIN SHAFT HEATED PUGMILL:** "Kneading" action assures even coating of every aggregate particle.
- **POWER SKIP HOIST:** Only 14" high for easy charging.
- **HIGH DISCHARGE:** Can discharge directly into place, into wheelbarrows or gas buggies.



You can depend on your* Barber-Greene *distributor:

J. D. Pittman Tractor Co.
Birmingham, Decatur and Tuscaloosa, Ala.

Burford-Toothaker Tractor Co.
Montgomery and Mobile, Ala.

Graze-Dempsey, Inc.
Jacksonville 5, Fla.

Square Deal Machinery & Supply Co.
Orlando, Fla.

R. S. Armstrong & Bro. Co. of Albany
Albany, Ga.

Yancey Bros. Co.
Atlanta and Augusta, Ga.

Burton Franklin Co.
Chattanooga, Tenn.

Priester Machinery Company
Memphis 5, Tenn.

Wilson-Weesner-Wilkinson Co.
Nashville and Knoxville, Tenn.

Construction gets underway for the new Electro Manganese Corporation plant in Knoxville, Tenn., with the grading of part of the 18 acre site. The new plant, with equipment, will cost about $2,000,000. It will approximately double the production and the employment of Electro Manganese's present Knoxville plant.

Knoxville Manganese Plant Now Under Construction

Excavation has been started for the new plant of Electro Manganese Corp., Knoxville. Ten buildings will be erected on an eighteen-acre site, at a cost of about $800,000, according to the city building permit.

The new facilities will have about the same capacity and number of employees as Electro Manganese's present plant, which is on Proctor Street in Knoxville, about a quarter mile from the new construction.

Producers of one of the top-priority defense materials, the corporation now has an output of 600,000 pounds of 99.9 plus per cent-pure electrolytic manganese per month. Company officials call it the purest manganese produced anywhere in the world.

Completion date of new unit is not yet known, reports E. M. Wanamaker, President. "Some of the special equipment isn't scheduled for delivery for more than a year," he added.

Special electrical equipment and other installations in the new facilities will more than double the announced construction cost.

The new plant will employ more than 100 workers, most of whom will be trained on the job. The present Knoxville plant has some 120 employees. Some of these, in office and technical departments, will operate both plants.

Harrison Construction Co., of Alcoa, has the job of moving 35,000 cubic yards of earth in preparing the site. Contractor on the building is V. L. Nicholson Co. Most of the 10 buildings will be two stories, and of concrete and brick construction.

Included in the building permit are structures described as giant, ore-storage bins. There also will be charcoal, metal, oil and paint storage buildings, leaching, purification and other processing buildings, and pump, power and office buildings.

Raw materials for Electro Manganese come from many parts of the world. The product is used as an ingredient in high-quality stainless steel and various nonferrous alloys. Under mobilization restrictions, only about five per cent of the product can be exported.

Electro Manganese Corporation operates only in Knoxville. The bulk of its stock is held by a group of St. Paul and Minneapolis business operators.

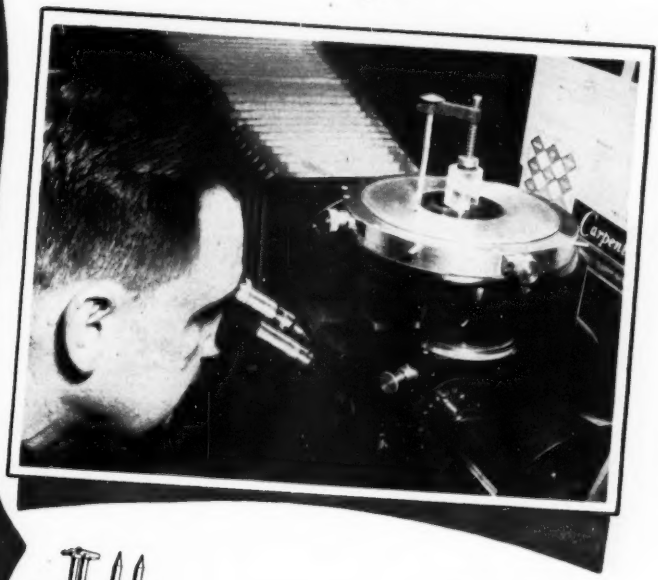
The Corporation was founded in 1938, and started production in its Knoxville plant in 1939.

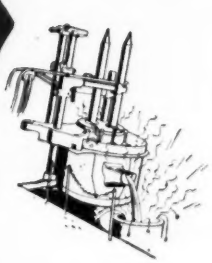
Steel has "FINGERPRINTS" too!

the quality of the steel you use is an important factor in the quality of your finished product...

therefore, you may be interested in the steps taken at CONNORS STEEL COMPANY to insure the quality of CONNORS STEEL...

this is one phase of "quality control" at CONNORS...





Steel's "fingerprints" are photos of its grain structure as seen through a metallurgical microscope. They identify its quality and characteristics.

"Fingerprinting" steel, a necessary step in the control of quality, is regular procedure at Connors in the production of fine steel.

Producers of electric furnace steel and a variety of light steel products for the Southern market, Connors is now engaged in a program of plant expansion designed to increase its capacity more than a third.

CONNORS STEEL COMPANY

ESTABLISHED 1907

DIVISION OF H. K. PORTER COMPANY, INC.

BIRMINGHAM, ALABAMA

Connors Steel Establishes Branch at Memphis

Connors Steel Co., a division of H. K. Porter Co., Inc., Birmingham, has established a branch sales office at Goodman House, 777 Court Avenue, Memphis, Tenn. to provide better service to its many customers in this growing industrial area.

In the announcement, B. C. Blake, Connors, vice president and general manager, stated that the opening of the branch is the latest move in Connors' continuing effort to expand and improve its services to the Memphis area.

The sales office will be managed by Willis C. Hagan who has many years' experience in Connors' sales department.

Pennsalt Expands Plant at Montgomery, Ala.

Pennsylvania Salt Manufacturing Co. has taken another step toward more complete pesticide service for Southeastern farmers in the addition of facilities to produce emulsion concentrate formulations at its Montgomery, Ala., plant.

This young plant, started by Pennsalt early in 1951, is one of the most modern dust-base formulating operations in the Southeast, embodying several new formulating techniques developed by Pennsalt.

The new facilities are producing emulsifiable concentrates of benzene hexachloride, DDT, toxaphene and BHC-DDT combinations, principally for cotton but also for other crops of the area. These products thus round out Pennsalt's line of pesticides which formerly included dust-base formulations of DDT, BHC, toxaphene, sulfur, parathion and other active ingredients.

The new facilities include blending and mixing tanks and apparatus, chiefly of copper and monel construction, and weighing and conveying equipment, plus the usual process controls. Four solvent storage tanks with a capacity of 60,000 gallons have been installed. Warehousing space has been increased 35 per cent and additional truck loading facilities have been included.

General contractor for the addition was Bear Brothers, Inc., of Montgomery, contractors for the original installation. Subcontractors included the Acme Roofing Co., Acme Plumbing Supply Co., Long McGehee Electrical Contractors, the Burt Boiler Works, and S. T. Newsom, Civil Engineer, all of Montgomery.

Construction Proceeds on Ocala-Belleview Hwy.

Under construction for a year, one section of the Ocala-Belleview highway is about one-half finished and the other, about twelve per cent along since it was started in March.

The project covers construction of approximately nine and one-half miles of four-lane divided highway including an urban section and an underpass under the Seaboard Airline railroad.

Seven Expressway Projects Pushed at Jacksonville

Construction is well under way on the Jacksonville, Fla. expressway, according to Richey Green, engineer of urban projects for the Florida State Road Department, who lists seven projects awarded to date totaling $18,701,521.

The two largest units in the program are the Arlington and Gilmore street bridges. The one will cost $11,090,278 and the other $5,294,365.

Projects include the following, listed by number, amount, location and contractor:

Project 7204-178, $987,921.91, from Arlington bridge to point approximately 4.296 miles east, Duval Engineering & Construction Co.;

Project 7204-179, $880,956.12, from point approximately one mile south of Beach Boulevard north to Atlantic Boulevard, Duval Engineering & Construction Co.;

Project 7204-180, $447,999.25, between Greenland and Beach Boulevard, Duval Engineering & Construction Co.;

Project 7204-275-A, $3,711,956, Arlington Bridge substructure, Merritt-Chapman & Scott Corp.;

Project 7402-275-B, $7,378,322, Arlington Bridge superstructure, Bethlehem Steel Corp.;

Project 7202-275-A, $1,179,668.94, Gilmore Street Bridge substructure, Diamond Construction Co.;

Project 7202-275-B, $4,114,696.93, Allied Structural Steel Co. and Industrial Contracting Co.

HERE'S HOW

Tournadozers speed sand jobs...

SAND in Arabia

Leveling drill sites

Working 250 miles from the nearest oasis in 150° temperatures, this Tournadozer is building and maintaining roads . . . leveling camp sites . . . preparing drill locations for Iraq Petroleum Co., Ltd. in eastern Saudi Arabia. Despite extreme heat and abrasive desert sand, only routine servicing has been required in year of operation.

SAND in Maryland

Push-loading scrapers

Nello L. Teer Co., Durham, N. C., built a 450,000-yd. sand fill for a Maryland highway with Tournadozer, 4 Tournapulls. Tournadozer push-loaded 12 pay yds. into each Tournapull in 30 sec. Same rig also worked on second cut 1½ mi. away . . . shuttling between the 2 cuts several times a day.

SAND in Holland

Reclaiming land

Bulldozer-Bedrijf H. J. Meijer, on 1,300,000-yd. soil reclamation near Deurne, report Tournadozer "their most effective dozer" for spreading sand over 65 to 230' distances. Fingertip control of blade gives accurate spreading depth without mixing layered earth. Rig places 120 cubic yards hourly.

SAND in Massachusetts

Cleaning up for shovel

Gil Wyner Co. Inc., Malden, Mass. makes Tournadozer's 19 m.p.h. mobility pay off. On Rt. 128 bypass near Lexington, dozer handled shovel and haul-unit cleanup . . . did 3 to 4 widely-scattered jobs every 10-hr. day. *"A terrific machine,"* says Operator Don Von Eeghen . . . *"It can beat any tractor!"*

SAND in Mississippi

Backfilling seawall

Harrison County (Miss.) uses Tournadozer to replace washed-out backfill for seawall near Biloxi. High speeds and high-traction tires keep rig moving through soft footing. *"I can hardly believe this is sugar sand we're working in after seeing Tournadozer perform,"* says County Engr. MacArthur.

Feeding asphalt plant

At Hattiesburg, Mississippi Hwy. Dept.'s Tournadozer, pushing sand 300 to 600' to asphalt plant hopper, does work of 2 crawlers. *"Tournadozer is the only tool we've found that can keep our plant supplied by itself,"* says Maint. Engr. J. F. Calhoun. After over 6,000 working hours, rig still runs on original tires.

We'll gladly give you more proof of the production increase possible on your sand jobs with rubber-tired, 19 m.p.h. Tournadozer . . . write, or call any time.

Tournapull, Tournadozer—Trademarks Reg. U.S. Pat. Off. D-143-5-b

The Florida Equipment Company

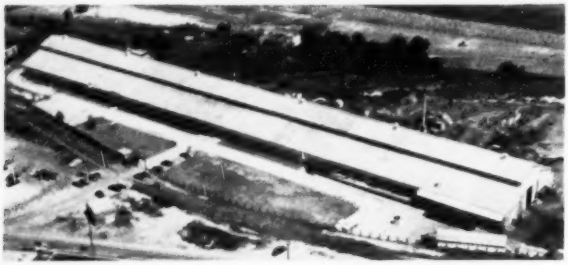
LET

10 Stockton Street
JACKSONVILLE 3, FLORIDA

1228 S. W. 1st St.
MIAMI, FLORIDA

1108-10 Twiggs Street
TAMPA 1, FLORIDA

Organizes Subsidiary, Plant Purchased by Koehring



Koehring Company of Milwaukee has purchased the Chattanooga plant shown for use in developing and manufacturing new models of power shovels and cranes.

Koehring Co. of Milwaukee, Wisc., has announced organization of another subsidiary company, known as Koehring Southern Co. This move has been made to provide increased facilities for the development and manufacture of new models of Koehring power shovels and cranes. It will not affect the present schedule of manufacture of Koehring construction equipment in the main Milwaukee plant.

The new subsidiary has purchased the Chattanooga, Tenn., plant of the Norge Division of Borg-Warner Corp., at a figure of about $500,000. The property consists of a modern factory 800 feet long and 120 feet wide, with a total of 100,000 square feet of floor space, including auxiliary buildings. Located on a 17-acre site on Manufacturers Road, the Chattanooga plant is served by rail, water and highway transportation.

Koehring Southern Company plans to spend approximately $1,000,000 for machine tools to equip the huge building for new-product manufacture.

According to J. R. Steelman, president of the parent Koehring Company in Milwaukee, it probably will be early next year before the Chattanooga unit can be placed in full operation, although production operations will be under way in two to three months. E. A. Brugger, vice president and general manager of Koehring Company, has appointed N. J. Decker, former Works manager of the Parsons Company, a Koehring subsidiary, and recently with the Koehring Company in the same capacity, to supervise the installation of new machinery, and start of operations in Chattanooga.

The following Koehring Company officers and members of the Board of Directors inspected the Koehring Southern property on a recent visit to Chattanooga: G. E. Long, Koehring chairman; J. R. Steelman, Koehring president; E. A. Brugger, Koehring vice-president and general manager; R. E. Brooks, chairman of the board of Cleaver-Brooks Co.; J. Victor Loewi, president of Loewi & Co.; H. F. Vogt, chairman of the board of Cutler-Hammer, Inc., all of Milwaukee, and Frederick Nymeyer of Nymeyer & Baird, Chicago. P. P. Graser, secretary-treasurer of Koehring Company of Milwaukee, and N. J. Decker, Koehring Southern Company plant manager, also were in the party.

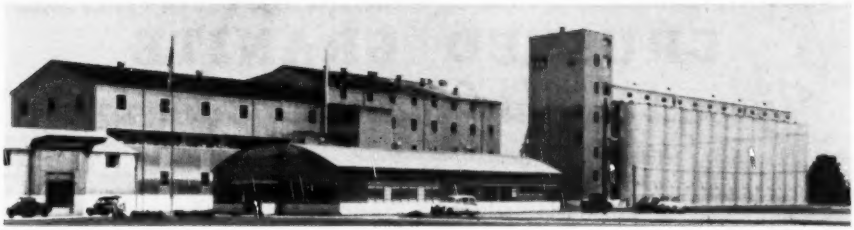
Koehring Company and its subsidiaries, which did a business of nearly $25,000,000 in its last fiscal year, are: principal offices and main plant in Milwaukee; Koehring Company of California of Stockton, California; C. S. Johnson Company of Champaign, Illinois; Parsons Company of Newton, Iowa; and Kwik-Mix Company of Port Washington, Wisconsin.

The main Milwaukee plant will continue to produce the standard Koehring line of power stovels, cranes, draglines, pavers and construction mixers. Parsons Company builds crawler-mounted and rubber-tired trenching machines, and Dumptor hauling units. Kwik-Mix manufactures concrete, bituminous, plaster-mortar mixers, power wheelbarrows, fork lifts, Mud-Jacks and longitudinal concrete finishers. C. S. Johnson Company builds concrete mix plants, bins, batchers, scales, silos, clamshell and concrete buckets. Koehring Company of California provides production and service facilities on the West Coast for products and parts for Koehring Company and its subsidiaries.

Koehring and subsidiary products are sold and serviced in the United States, Canada and Latin America by over 160 construction equipment distributors. In the eastern hemisphere, Koehring and subsidiary products are manufactured and sold by Newton Chambers & Company Ltd. of Thorncliffe, England, and Winget Limited of Rochester, England, under license.

T. V. A. Man Cited

August J. Davis, who joined TVA's architectural engineering staff in January 1952, has been awarded the Alpha Rho Chi medal for outstanding qualities of scholarship and leadership in the academic year 1951-52.



Above—Quaker Oats Company has formally opened the country's only pneumatic corn mill, at Chattanooga, Tennessee.

Quaker Oats Has Country's Only Pneumatic Corn Mill

The new Quaker Oats Co. corn mill, at Chattanooga is the only pneumatic plant of its kind in North America.

There are 39 grain storage bins with a storage capacity of 625,000 bushels of grain. The pneumatic corn mill is the four-story building. Nearby is the packaging building. A one-story warehouse is 90 by 360. The administration building houses the employee cafeteria, locker rooms and general office.

Corn from the storage bins is conveyed mechanically through a tunnel to the mill where it is picked up by the pneumatic system. The corn goes through several cleaning processes before milling. These include magnetic separators to remove metallic fragments; milling separators and scourers to eliminate light impurities and cob bits; and electrostatic separator to eliminate microscopic impurities and foreign matter remaining after preceding steps; a floater and washer to float and scrub off dust and dirt particles; and a shizzer to eliminate excess water from the grain.

The cleaned corn is then ready for milling. In the conventional corn mill, gravity and bucket elevators are employed to get the milling stock from one step to another. Furthermore, roll stands, sifters and purifiers are located on separate floors. In the Chattanooga corn mill of the Quaker Oats Co., however, all roll stands, sifters and purifiers are located on the same floor level.

The system for conveying the corn from each of the processes on the same floor level suggest somewhat the "change" tube system employed in some department stores. The pipes and equipment are, of course, different. The pipe lines have transparent sections which reveal the flow of materials. The corn passes through these tubes at approximately 4,000 feet a minute.

At the points where the raw material leaves the pneumatic tube to enter a processing step, it passes through an air separator. In these separators the stock drops from the air stream and is allowed to pass through a rotary valve into the milling system. After it goes through a milling step, the corn drops back into the pneumatic tubes and is carried on to the next process.

The milling equipment for the pneumatic corn mill was imported from Switzerland and is considered the most modern available. It is automatic in operation and employs a system of electric controls for uniform quality and efficiency of operation.

The Chattanooga Mill was put into trial and test runs early in 1952 and formally opened in June.

St. Regis

(Continued from page 12)

which is equipped with a 28-inch-diameter breast roll and a 44-inch-diameter couch roll. Panelyte covered stainless steel forming boards, rubber covered wire rolls, ten Panelyte covered stainless steel suction boxes, mounted on stainless steel clad box section frames, arranged for shake from three shake units, motor-driven. The entire fourdrinier frame may be supported cantilever-wise from the backside of the machine by four hold-down positions to enable drawing on a wire that has previously been draped in position on carriages and supports in the tending aisle.

The press part of the machine, which follows the fourdrinier section, consists of two sets of heavy type housings for 36-inch diameter, rubber covered suction bottom press rolls, arranged for straight through operation without reversing, for which the 30-inch diameter top press rolls are provided with a Stonite cover for the first press, and a rubber cover for the second press. The top rolls are equipped with hydraulic cylinders for pressure and lifting.

Following the press section of the machine is a smoothing press, consisting of a Stonite bottom roll, and a rubber covered top roll, each 30 inches in diameter, mounted in a box section type of frame in conjunction with the dryer framing. Pressure loading is applied by hydraulic cylinder. The Dryer Part of the machine, consists of 70 paper dryers and 18 felt dryers, all 60-inch diameter x 226-inch face, arranged in four sections with four indriving shafts.

The paper machine is designed and built for a maximum speed of 2400 feet per minute. Practically all of the rolls are provided with anti-friction bearings.

The machine is driven by a Westinghouse Sectional Electric Motor drive with automatic control and electronic speed regulation. The power supplying motor-generator set, consisting of a 3000-horsepower synchronous motor, 2300-volt, a 2000 kilowatt d.c. generator 600-volt, and a starting generator together with the exciter sets, speed regulating equipment, ventilating blower, A.C. and D.C. control switchboard, and the 250-horsepower motor generator set for the winder drive are located in an enclosed room on the ground floor of the machine room under the drive aisle about midway of the dryer section.

A building extension to the original machine room building 44 feet wide by 396 feet long houses all of the added paper-making equipment and facilities except the winder and unwinding equipment which had to be located in the building extension of the Finishing Room (44 feet by 144 feet).

In an extension to the Stock Preparation Building, seventy-one feet wide by one hundred and ten feet long, is located the refining equipment on the operating floor level with the stock chests, pumps, agitator drives, etc., on the ground floor below.

There are two lines of refiners, each consisting of two No. 3 Claflin refiners and four No. 5 Miami Jordans, arranged with piping to provide for a two-circuit flow of stock from chests for a primary and secondary refining and a finishing treatment, flowing direct to the paper machine regulating head box. Each of these refiners and jordans are driven by a Westinghouse 350-HP, 400-RPM, synchronous motor.

Three concrete stock chests, horizontal with mid-feather, equipped with horizontal propeller type agitators, motor-driven through gear reducers, furnished by the Shartle Brothers Machine Co., provide for the storage and handling of stock from the refiners, to the machine and broke returned from the paper machine.

The stock pumps were furnished by Gould Pumps, Inc., and the piping for all stock and white water lines in both the stock preparation and machine rooms is fabricated stainless steel.

All of the concrete stock chests throughout the mill extension, and various pits and chests under the paper machine, have been lined with Semplate tile by the Stebbins Engineering and Manufacturing Co. Semplate tile linings were added also in the concrete stock chests and various pits that were originally built in the mill.

The digester building extension, 26 feet wide by 150 feet long, houses seven added digesters 2700 cubic-feet capacity, 10-feet-6-inch diameter by 41 feet long, furnished by the Chicago Bridge and Iron Co. Each digester is provided with an 8-inch stain-

less steel Yarway seatless blow valve, equipped with a cylinder for hydraulic operation.

An added belt conveyor over the extended chip bins above the digesters and clam shell type of discharge gates at the hoppers of the chip bins for filling the digesters with chips were supplied by the Jeffrey Manufacturing Co.

There is still to be added to this part of the mill another Blow Tank and digester blow heat recovery unit to provide more flexibility in cooking operations and minimize down time. It is expected that these installations will be completed by the end of this year.

The Washer Room was extended with a structure 40 feet wide by 98 feet long, in which to install an Impco brown stock washing system, consisting of one line of three 8-foot by 12-foot washers, with repulpers and a vibratory Deknotter.

Three 30-foot-diameter by 20-foot steel tanks for the storage of the black liquor filtrates from the washers and one 20-foot-diameter by 35-foot-high steel foam tank, located on the ground in the area adjoining the extended washer room, were furnished and erected by the Chicago Bridge and Iron Co.

In the extension of the Screen Room Building, 72 feet wide by 90 feet long, there are installed sixteen Impco 4-plate bronze vat, flat screens, arranged in eight lines of two screens per line, and two 8-foot-diameter by 8-foot-wide Impco Vacuum deckers with repulpers.

A new lime reburning kiln, 8-foot-diameter by 140 feet long, similar to the kiln originally installed in the mill, was furnished by the Vulcan Iron Works. Provided with a firing hood for either gas or oil firing and fed by dry mud from an Oliver Mud Filter, 6-foot-diameter by 4 feet, the new installation has been located adjacent to the original one.

To provide for the increased demand for steam for the added pulp and papermaking facilities and power required therefor, an added integral furnace boiler, natural gas fired, 140,000 pounds per hour capacity of 400-pound steam, furnished by the Babcock and Wilcox Co., was erected in a building 40 feet by 60 feet, extended from the original boiler house.

In addition to this available steam output, it is expected to obtain from each of the boilers of the two recovery units units 61,000 pounds per hour of 400-pound waste heat produced steam.

A Babcock and Wilcox Sterling type of boiler, 400-pound design, 50,000 pounds steam per hour capacity with double cell dutch oven was erected to provide for for the diposal of the bark and refuse from wood handling and chipping operations. The bark and refuse is delivered by conveyor from the barking drums and other points of origin to a steel bin with screw feeders, built and furnished by the Hofft Company, and located over the dutch oven of the boiler. A fly ash and soot collector, designed and furnished by the Buell Engineering Company, is installed between the furnace gas outlet and the induced draft fan for precipitation of the dusts and solid particles in the gases, and thus provide further abatement of smoke and improve the alleged poullution of the air.

A new building, 40 feet by 100 feet extended out from the orginal electric power plant, houses the installation of two 5,000 KW, 2,300 Volt, A. C. 80 per cent P. E. Westinghouse turbine generators and the electric feeder distribution switch gear. Each of these units is designed for operation with steam at the throttle of turbines at 400 pounds gauge and a total temperature of 600°F. One of the units is provided with a 6,000 square-foot Westinghouse surface condenser, circulating pump, condensate pumps and required auxiliary equipment and arranged for extraction of 50 pounds gauge steam. The other unit is arranged for the extraction of 150 pounds gauge steam and exhausts at a back pressure of 50 pounds gauge.

Because of a later start in construction or delay due to obtaining structural steel, strikes at vendors' plants, or other causes, there is in progress construction on several plant extension units not yet completed. Included in these is a building 55 feet by 72 feet for housing two roll grinders, moved from present positions in the mill, and a storage space for various rolls for the paper machines.

A paper roll storage building 120 feet wide clear span by 438 feet long and 48 feet high, with overhead crane runways for two cab-operated hoist and roll grab units on transfer bridges to provide for storage of paper rolls between the paper supply and the bag plant operations is

(Continued on page 183M)

St. Regis

(Continued from page 18L)

under construction, and completion is scheduled for late this year.

An extension 360 feet wide by 144 feet long to the bag plant has been underway for sometime, but progress has been retarded by lack of structural steelwork to permit erection of the building. It would appear from the deliveries of steel work that are now scheduled that this structure will also be completed and equipped for operation by the last quarter of this year.

In general, the buildings involved in the plant extensions conform to the construction of the buildings originally provided in the mill, and consist of structural steel framework on concrete foundations, with concrete floors on ground and suspended steel members, corrugated transite siding on steel girts with steel sash for paper mill and power plant buildings and open canopy construction for the buildings for the pulp mill and power plant.

Precast concrete tile slabs, supported on steel purlins, and covered with a build-up roofing form the roofs for paper and pulp mill group of buildings, while corrugated transite is used for the roofs of the power plant and recovery group of buildings. Steel grating walkways, platforms and stairs are used extensively in the recovery building.

Principal items of equipment and materials involved in the mill expansion and vendors from whom obtained included: Paper machine, Bagley & Sewall Co.; Pressure Slice and Inleet, Pusey & Jones Co.; Mixing Pump, Ingersoll-Rand Co.; Crane Bridge Extension, Manning, Maxwell & Moore; 6-Ton Reel Crane, Euclid Crane & Hoist Co., Brown & Sites, Reps.; Freight Elevator, Otis Elevator Co.; Scales, Toledo Scale Co.; Digesters, Chicago Bridge and Iron Co.; Chip Bin Gates, Jeffrey Manufacturing Co.; Steel Storage Tanks, Stacks, Chicago Bridge and Iron Co.; Turpentine Recovery Equipment, Foster-Wheeler Co.; Boilers—gas fired, Boilers—bark fired, Recovery Units, Babcock & Wilcox Co.; Electrostatic Precipitators, Koppers Co.; Lime Kiln, Vulcan Iron Works; Gas Burner for Kiln, Coppus Engineering Co.; Bark Storage Bin and Feeders, Hofft Co.; Liquor pumps and Boiler Feed Pumps, Ingersoll-Rand Co.; Stock and Water Pumps, Goulds Pumps, Inc.; Chip Conveyor Belt, Jeffrey Manufacturing Co.; Deaerating Feed Water Heater, Elliott Co.; Turbine Generators, Condenser and Pumps, High Voltage Switch Gear, Low Voltage Control Centers, Indoor Transformer Power Centers, Paper Machine Sectional Electric Drive, Motors, Westinghouse Electric Corp.; Air Compressor, Ingersoll-Rand Co.; Lime Kiln Controls and Instrumentation, Minneapolis-Honeywell Co.; Structural Steel, Virginia Bridge Co.; Miscellaneous Steel, Mobile Steel Co.; Sprinkler Installation, Moore Pipe and Sprinkler Co.; Tile Linings for Chests and Pits, Stebbins Engineering & Manufacturing Co.; Kiln Lining and Refractories, Harbison Walker Refractory Co.; Suspended Arches and Supported Walls for Bark Boiler, LaClede Arch Co.; Refractory Materials, Carter-Beardon Co.; Air Duct Systems, Independent Roofing and Const. Co.; Plug Valves, DeZurick Shower Co.; Fabricated Stainless Steel Pipe, tanks and regulating box, W. L. Rives Co.; Fabricated steam piping, Crane Co.; Paint-materials, Mobile Paint Manufacturing Co.; Painting-labor only, J. I. Hass Co., Inc.; Insulation-pipe, Mastic Coating on tanks and vessels, Shook & Fletcher; Tubing and fittings, J. M. Tull Metal and Supply Co.

Lavers Joins Ebasco

Ebasco Services Inc., engineers, constructors and business consultants, have announced that W. Douglas Lavers has joined the firm as construction manager. Mr. Lavers will be responsible for construction projects outside of the United States, the announcement stated.

Mr. Lavers comes to Ebasco from Union Carbide and Carbon Corp. where he was plant manager of the electromagnetic plant for the separation of uranium isotopes at Oak Ridge, Tenn. Prior to that he was engaged in construction of the Norris, Chickamauga, Kentucky and South Holston dams. He was assistant construction engineer and acting project manager on the South Holston project.

A native of Nova Scotia, Mr. Lavers is a graduate of Northeastern University. He is an associate member of the American Society of Civil Engineers.

Above—Perspective of new plant being built at Austin, Texas by Newspapers, Inc., publishers of the American-Statesman. Designed by Jessen, Jessen, Millhouse & Greeven, the building will be 150 by 210 feet, two stories and basement, with reinforced concrete frame, cast stone and granite frame, steel joist roof framing and reinforced gypsum concrete roof over fiberglas forms. The entire building will be air-conditioned.

June Awards Total $357,448,000

By S. A. Lauver

SOUTHERN construction in the first six months of 1952 amounted to 2,463,265,000, according to a tabulation of reports published in the daily construction bulletin of the *Manufacturers Record*. The June valuation was set at $357,448,000, a decline of twenty-one per cent from the preceding month and of only two per cent when compared with June of last year.

The current six-month figure of $2,463,265,000 compares favorably with the $3,347,118,000, when the latter is deflated of the astronomical expenditures being made for the two atomic bomb plants being pushed in the states of South Carolina and Kentucky. Just one of those—the Aiken operation—is estimated to involve more than one billion dollars.

The first-half total embraces $861,371,000 for industrial projects; $483,826,000 for public building; $449,110,000 for private building; $254,178,000 for heavy engineering type construction, and $314,780,000 for highways and bridges. The public building and highway and bridge figures represent increases over the valuations for similar work in the first six months of last year.

Public building's $483,826,000 was ten per cent larger than the figure registered in the first six months of last year. The current total embraces $321,067,000 for government buildings as such and $162,759,000 for schools. Last year at this point the public building statistics included $219,448,000 for school work and $215,457,000 for government buildings.

Private building, with its $449,110,000 total, is down about fourteen per cent from the level established in the first six months of 1951. Assembly building, for which the total was $41,173,000, was the strongest when compared with its 1951 first-half counterpart. The other categories also showed drops ranging from the twelve per cent in the residential field to the forty-eight per cent for office structures. Totals for these were: Commercial, $25,382,000; residential work, $363,967,000; offices, $18,588,000.

Highway and bridge contracts so far this year are almost ten per cent greater in value than in the first six months of 1951. The current total of $314,780,000 does not include a number of southern lettings, which due to delays in receiving the returns and the late date in the month, are not tabulated in the six-month figure.

Engineering type construction in the first six months amounts to $354,178,000, this about one per cent below the figure for the comparable period of last year. Included in the current figure are $254,807,000 for dams, drainage, earthwork and airports; $64,879,000 for sewer and water work, and $34,492,000 for government electric projects. The dams-drainage-earthwork category represents a rise of slightly more than five-tenths of one per cent. Government electric project value is up thirty-one per cent.

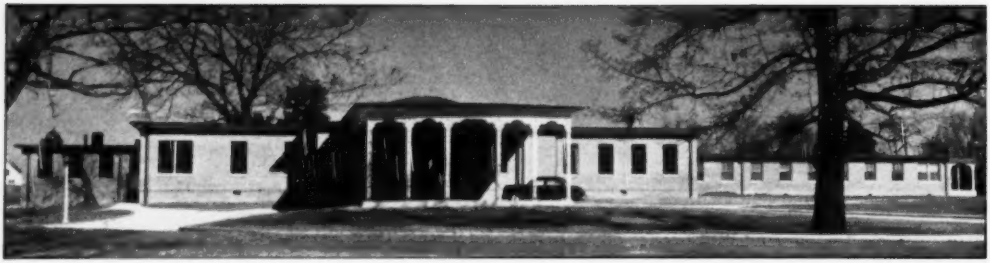
Industrial construction at the halfyear mark stood at about fifty per cent of what it was at this time last year. The total so far in 1952 is $861,371,000. Last year, at the half-way point, it was $1,737,212,000. The figure at that time, however, was considerably inflated by the huge atomic bomb projects launched by the federal government.

June's construction value of $357,488,000 embraces $144,431,000 for industrial projects; $66,936,000 for public building; $56,321,000 for highways and bridges; $46,591,000 for private building and $43,169,000 for heavy engineering type construction. While all the categories are down, the highway and bridge total will

(Continued on page 20)

SOUTH'S CONSTRUCTION BY TYPES

	June, 1952		Contracts Awarded First Six Months 1952	Contracts Awarded First Six Months 1951
	Contracts Awarded	Contracts to be Awarded		
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	$12,798,000	$9,225,000	$41,173,000	$42,288,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	7,713,000	28,924,000	25,382,000	33,643,000
Residential (Apartments, Hotels, Dwellings)	24,193,000	35,886,000	363,967,000	415,442,000
Office	1,887,000	2,525,000	18,588,000	36,248,000
	$46,591,000	$76,560,000	$449,110,000	$527,621,000
INDUSTRIAL	$144,431,000	$193,912,000	$861,371,000	$1,737,212,000
PUBLIC BUILDING				
City, County, State, Federal, and Hospitals	$46,859,000	$166,328,000	$321,067,000	$215,457,000
Schools	20,077,000	52,859,000	162,759,000	219,448,000
	$66,936,000	$219,187,000	$483,826,000	$434,905,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	$34,059,000	$64,510,000	$254,807,000	$253,326,000
Federal, County, Municipal Electric	4,126,000	2,785,000	34,492,000	26,213,000
Sewers and Waterworks	4,984,000	7,346,000	64,879,000	81,248,000
	$43,169,000	$74,641,000	$354,178,000	$360,787,000
ROADS, STREETS, BRIDGES	$56,321,000	$78,810,000	$314,780,000	$286,598,000
TOTAL	$357,448,000	$643,110,000	$2,463,265,000	$3,347,118,000



New Noxubee County Hospital in Mississippi cost $615,000 and contains 41 beds, with an out-patient clinic. It is built of concrete and masonary, with floor and roof slab supported on steel bar joists. Johnston, Jones and Reynolds were the architects and structural engineers. General contractor was Hinton Construction Co., Soso, Miss., mechanical contractor, Boddy and Johnson, Montgomery, Ala., electrical contractor, Kemp Electric Co., of Louisville, Miss.

June Awards

(Continued from page 19)

be swelled to much larger proportions when the returns are received from the late June lettings. For instance, North Carolina's letting is set at $3,500,000; West Virginia's at $1,670,000. Tennessee and Arkansas are yet to be received.

American business, with the South participating at its corresponding level, will continue plant and equipment expenditures at a high rate through the third quarter of this year, according to an announcement issued at the middle of last month by the Department of Commerce and the Securities and Exchange Commission.

Current spending plans, it was revealed by a survey by those two federal agencies, will be at the rate of $6,400,000,000 and $6,100,000,000, in the second and third quarters of 1952. These are described as record rates after allowance for seasonable factors.

The present survey shows the first quarter capital outlays lower and anticipated second quarter expenditures higher than expected three months ago. Reason advanced by the Commerce-Security and Exchange report, is "a systematic tendency for anticipatory data to be overstated in the first quarter of each."

Expenditures forecast for the first nine months of 1952 are set at $18,100,000,000, or nine per cent more than in the comparable period of 1951. "If this rate of investment is achieved," it is pointed out, "it appears likely that the previous estimate of $24,100,000,000 for the full year 1952 would be exceeded."

Electric and gas utilities are expecting the largest increases in capital outlays. Fixed investment programs of manufacturing concrete indicate relative stability, as compared to rapidly rising investment in the earlier post-Korean period. "This stability reflects the off-setting effects of increasing programs of petroleum, chemicals and non-ferrous metals and reduced spending plans by most other manufacturing industries."

Motor vehicle, other transportation equipment and electrical machinery concerns plan to continue their capital outlays at high levels. Plant and equipment expenditures by railroads and mining companies in the third quarter are expected to be maintained at annual rates of $1,600,000,000 and $900,000,000.

An accelerated military construction program, to add impetus to the large amount of work now under way, is expected as the result of the additional money appropriated by Congress. The program, as submitted by the Department of Defense, would involve expenditure of $2,027,752,000 for army, navy, air force and marine installations, and an additional $1,000,000,000 in give-away money to foreign countries.

Located inside continental United States would be $1,212,844,000 for the proposed program, this including $859,991,000 for the air force; $178,809,000 for the army, and $174,044,000 for the Navy. Outside United States boundaries are proposed projects involving an estimated expenditure of $242,555,000, of which $139,099,000 would be for the air force; $68,617,000 for the army and $34,839,000 for the Navy.

The South's share in the continental work would be $672,372,000. By states the figure would be Alabama, $30,555,000; Arkansas, $47,829,000; Florida, $126,173,000; Georgia, $41,811,000; Kentucky, $23,172,000; Louisiana, $48,093,000; Maryland, $39,818,000; North Carolina, $44,378,000; Oklahoma, $32,430,000; South Carolina, $21,081,000; Tennessee, $13,355,000; Texas, $168,469,000; Virginia, $32,424,000, and the District of Columbia, $2,784,000.

While the steel situation was reportedly easing prior to the current strike, a South Carolina industrialist even at that time was having difficulty obtaining the material required for expansion. He says "we have been unable so far to get steel, although we have had an order in for over a year," adding that plans were ready to go ahead when the material is received.

Some idea of the losses inflicted on the country since the end of the second world war of modern times may be had from a statement by the American Iron and Steel Institute which points out that strikes in that period have cut down production by more than 36,192,000 tons.

Bids for road construction in June, apparently were more satisfactory than in the preceding month, judging from scattered reports. In Oklahoma, for instance, early June letting total was $2,782,655, or about $21,012 under estimated costs. Low bids on structures ran under estimates more than did those on grading, drainage and paving. North Carolina was also the scene of a letting where bids were under estimates. Total of the low bids was $3,574,943. This was $252,456 under the highway commission's figures.

Another favorable factor in the southern highway pictures is the opening of bids for test borings on the proposed West Virginia Turnpike. The Mountain State a few months ago sold $96,000,000 in bonds to finance construction of that eighty-eight mile route from Charleston to a point near Princeton. Among other southern states studying similar projects are Georgia and Tennessee. Oklahoma,

(Continued on page 51)

SOUTH'S CONSTRUCTION BY STATES

	June, 1952		Contracts Awarded First Six Months 1952	Contracts Awarded First Six Months 1951
	Contracts Awarded	Contracts to be Awarded		
Alabama	$9,190,000	$15,945,000	$171,069,000	$174,769,000
Arkansas	10,568,000	4,546,000	44,660,000	88,345,000
District of Columbia	1,311,000	15,874,000	29,260,000	16,225,000
Florida	28,547,000	23,514,000	257,252,000	214,223,000
Georgia	16,361,000	56,687,000	152,646,000	100,416,000
Kentucky	7,643,000	41,532,000	61,288,000	412,389,000
Louisiana	54,385,000	23,867,000	273,636,000	272,207,000
Maryland	14,015,000	55,714,000	207,913,000	244,432,000
Mississippi	5,321,000	30,367,000	64,211,000	103,090,000
Missouri	3,199,000	31,971,000	50,301,000	122,160,000
North Carolina	14,314,000	37,785,000	125,350,000	125,437,000
Oklahoma	31,352,000	11,205,000	84,695,000	36,696,000
South Carolina	46,827,000	13,533,000	104,106,000	445,800,000
Tennessee	27,149,000	43,369,000	116,575,000	115,879,000
Texas	54,621,000	200,406,000	514,869,000	672,627,000
Virginia	26,336,000	29,297,000	156,097,000	168,729,000
West Virginia	6,299,000	7,548,000	49,337,000	33,694,000
TOTAL	$357,448,000	$643,110,000	$2,463,265,000	$3,347,118,000

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40 drawbar hp. 11,250 lb.	72 drawbar hp. 18,800 lb.	109 drawbar hp. 27,850 lb.	Hydraulic Torque Converter Drive 175 net engine hp. 41,000 lb.

ALLIS-CHALMERS

TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

ALABAMA

Proposed military construction program for Alabama includes the following: Craig Air Force Base, Selma, $2,402,000; Birmingham Modification Center, Birmingham, $1,603,000; Brookley Air Force Base, Mobile, $4,935,000; Gunter Air Force Base, Montgomery, $1,971,000; Maxwell Air Force Base, Montgomery, $12,114,000.

ANNISTON — Anniston Memorial Hospital received low bid from Dethlefs & Hannon, Anniston, at $358,336, for remodeling hospital.

ANNISTON—U. S. Engineer Office, Mobile, let contract to The Jordan Co., and McMath Construction Co., Columbus, Ga., at $1,355,-360 for 100 ammunition storage magazines, Anniston Ordnance Depot.

BIRMINGHAM—Birmingham Gospel Tabernacle has plans in progress for tabernacle, at $150,000.

BIRMINGHAM—City Board of Education let contract at $86,147 to Ralph A. Smallman Co. for Center Street School and $76,148 for North Patterson School.

BIRMINGHAM—City Board of Education let contract at $134,400 to E. C. Coston, Hueytown, Bessemer, for boys' gymnasium for Woodlawn high school.

BIRMINGHAM — Brookhaven Methodist Church Congregation let contract to F. R. Hoar & Son, Birmingham, at $29,900, for church addition.

BIRMINGHAM—J. C. Bookout let contract to Capitola Construction Co. for motor terminal warehouse, cost approximately $35,000.

BREWTON—City received low bid of $95,-331 from Southeastern Contrg. Co., Birmingham, for gas system extension.

ENSLEY—Housing Authority plans housing project, 700 units, cost, $6,000,000.

CLANTON—Clanton Baptist Church Congregation received low bid of $106,600 from Cooper Bros. Constr. Co., Selma, for educational building.

CLANTON—First Baptist Church Congregation received low bid of $106,600 from Spinks Constr. Co., Thomasville, Ala., for alterations and additions to church building.

HUNTSVILLE—Post Quartermaster, Purchasing and Contracting Office, received low bid from Harlan Construction Co., Nashville, Tenn., at $57,762, for alterations and repairs to Buildings 172 through 179, Redstone Arsenal.

JASPER—City Board of Education let contract to Construction Engineers for addition to elementary school, cost $159,785.

LANETT—City let contract at $153,603 to M. G. Aldridge, Macon, Ga., for sanitary sewers and sewage pumping station and sewage force main.

MARION—City let contract at $223,256 to McGowin Construction Co., Opelika, for sanitary sewer and treatment plant.

MARION—Marion Military Institute let contract at $210,688 to Johnes & Hardy, Montevallo, for dormitory building.

MOBILE—Alabama State Board of Education received low bid of $926,234 from Peyton Higgison Co. for state trade school.

MONTGOMERY—Housing Authority received low bid of $2,779,620 from Shelby Constr. Co., New Orleans, for 390-unit housing project.

MONTGOMERY—Dr. John C. Mathews received low bid of $101,452 from Wyatt Constr. Co., Montgomery, Ala., for dental clinic.

MOUNTAIN BROOK—City let contract at $163,295 to Mac's Contracting Co. & Holt Rast, Birmingham, for sanitary sewers.

NORMAL — State Board of Education, Montgomery, let contract at $313,859 to Butler & Cobbs, Montgomery, for dormitory building at A&M College.

SELMA—Methodist Children's Home negotiated contract with Richardson Construction Co. at $123,000 for two cottages; George P. Turner, Archt.

SYLACAUGA—City received low bid of $271,665 from Southeastern Contrg. Co., Birmingham, for natural gas system.

TARRANT—Rock Methodist Church Congregation received low bid of $59,639 from Wilborn Construction Co., Birmingham, for church.

TARRANT CITY — City Park & Recreation Board received low bid from F. R. Hoar & Son, Homewood, at $113,000, for completion of community building.

TUSCALOOSA—Dr. Leonard I. Lesser let contract to Max Laycock at $35,700 for clinic building.

TUSCALOOSA—State Board of Education, Montgomery, let contract at $502,500 to Adams & Baker for State Vocational & Trades School.

ARKANSAS

CRITTENDON—Corps of Engineers, Memphis, Tenn., let contract at $159,500 to Driver Contracting Co., Memphis, Tenn., for approximately 550,000 cu. yd. earthwork in levee and berm construction, Inv. No. 40-041-52-99.

HOT SPRINGS—Westinghouse Electric Corp. let contract to Ditmars-Dickmann-Pickens Construction Co., Little Rock, for new $6,000,000 glass lamp factory on Lake Catherine near Hot Springs.

PHILLIPS & DESHA COUNTIES — Corps of Engineers, Memphis, Tenn., let contract at $219,500 to H. N. Rodgers & Sons Co., Memphis, Tenn., for placement of approximately 650,000 cu. yd. earthwork in levee construction in vicinity of Ferguson, Inv. Ser. No. Civ.-40-041-52-98.

PINE BLUFF — The Diamond Alkali Co. will construct new plant for production of chlorine and caustic soda; estimated cost $300,000.

DISTRICT OF COLUMBIA

ANACOSTIA—Senate Appropriations Committee recommended allocation of $75,000 for planning of a flood control and navigation project on the Anacostia River; planning fund would be the start on a $7,336,000 project by the Army Engineers to make the Anacostia navigable as far as Bladensburg, Md.

WASHINGTON — Representative John L. McMillan introduced a bill authorizing expenditure of $5,120,000 to improve negro schools in the District of Columbia.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from Walter Truland Corp., Arlington, Va., at $74,850, base bid, for alterations of primary service facilities, Internal Revenue Building; Inv. GSA-3-B-1484.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from F. S. Bowen Electric Co., Bladensburg, Md., at $295,900, Alt. A, for repairs and improvements, Liberty Loan Building; Inv. GS-R4-B-1401.

WASHINGTON—Navy Dept., Public Works Office, received low bid from Harnischfeger Corp., Milwaukee, Wisc., at $52,740, Item I, for cranes, Bldg. 205 and Bldg. 176, NGF; Spec. 33077.

WASHINGTON—Navy Dept., Public Works Office, received only bid from Koolair Co., Washington, at $72,884, Item I, for rehabilitation of heating and ventilating system, Bldg. 137, NGF; Spec. 33079.

WASHINGTON—Navy Dept., Public Works Office, received low bid from Perry & Wallace, at $24,296, Item I, for alterations to Bldg. 5B, NRL; Spec. 34450.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from Eugene F. and Joseph P. Quigley, Washington, at $157,597, for mechanical improvements program, Bureau of Standards Bldg. 5.

WASHINGTON — District Commissioners received low base bid of $292,800 from W. M. Chappell, Inc., for Cleveland Park Branch Library.

WASHINGTON — District Commissioners will ask Congress for $1,200,000 to build a relief sewer in Rock Creek Park.

WASHINGTON — District Commissioners received low bid from Gunnell Construction Co. at $49,625 for alterations and laboratory equipment, Roosevelt High School.

WASHINGTON—President Harry S. Truman asked Congress for $50,000 for use by his successor to make alterations in the White House.

FLORIDA

Proposed military construction program for Florida includes the following: Homestead-Dade County Airport, Homestead, $31,-516,000; Lakeland Airport, Lakeland, $19,-167,000; MacDill Air Force Base, Tampa, $8,-669,000; Venice Municipal Airport, Venice, $3,651,000; Pinecastle Air Force Base, Orlando, $11,044,000; Tyndall Air Force Base, Panama City, $1,835,000; Lynn Haven (Petroleum Storage Area), Panama City, $72,000; Palm Beach County International Airport, West Palm Beach, $1,200,000; Patrick Air Force Base, Cocoa, $10,770,000; Eglin Air Force Base, Valparaiso, $3,242,000.

BROOKSVILLE—Hernando County Board of Public Instruction let contract at $74,540 to Pemberton Construction Co., Plant City, for addition to school.

CAMP BLANDING — Corps of Engineers, Atlanta, Ga., received low bid from Girvin & White, Jacksonville, at $1,653,360, for rehabilitation of utilities.

CAMP BLANDING — Corps of Engineers, Jacksonville, let contract to William A. Smith Construction Co., Inc., Kansas City, Kans., at $272,774, for rehabilitation of railroad spur; Inv. ENG-08-123-52-74.

CECIL FIELD—Navy Dept., Public Works Office, Charleston, S. C., let contract to R. E. Clarson, Inc., Tampa, at $1,854,257, for C. V. G. hangar, U. S. Naval Auxiliary Air Station; NOy 71306; Spec. 32877.

CHATTAHOOCHEE — Florida State Improvement Commission, Tallahassee, received low bid from Winchester Construction Co., Tallahassee, at $856,000, for male and female wards, Florida State Hospital.

DADE COUNTY — Dade County Board of Public Instruction, James T. Wilson, Supt., Miami, received low bid of $275,610 from Perry E. Willits, Inc., Miami, for addition to Dorsey Junior High School for colored.

DADE COUNTY—A. N. Brady Wholesale Hardware, Inc., Miami, let contract to Witters Construction Co., Hialeah, for warehouse, cost $141,468.

DADE COUNTY—Board of County Commissioners, Dade County Port Authority, Miami, has plans completed for terminal expansion, Miami International Airport, cost $1,000,000.

DADE COUNTY—Hugh M. Matheson, Jr., plans restaurant, cost $80,000, Biscayne Key.

DADE COUNTY—Stevens Market, c/o Max Stevens, will receive bids, no date set, for addition to market, Dade County, Fla.

DADE COUNTY—Biscayne Villas, Inc., received low bid of $568,000 from Feldman Bldg. Corp. for 74-room hotel, Key Biscayne, Tract 5.

DADE COUNTY—Morris S. Burk, Bay Harbor Island, will construct warehouse, cost $80,000.

FORT PIERCE—Naco Fertilizer Co. has construction underway on new fertilizer plant, cost $650,000.

KEY WEST — Navy Dept., Public Works Office, received low bid from M. R. Harrison Construction Corp., Miami, at $161,750, Item I, for building repairs; NOy 29456; Spec. 31130.

MIAMI — St. Matthews Evangelical Lutheran Church Congregation let contract to Witters Constr. Co., Hialeah, at $105,000, for church building.

MIAMI—Antonio Miranda received low bid of $71,750 from Deigaard & Preston Builders, Coral Gables, for store building.

MIAMI—Beth David Congregation received low bid of $70,885 from Momar Construction Co. for school.

MILTON—Navy Dept., Public Works Office, let contract to Smith Engineering Construction Co., Pensacola, at $724,184, for repairing existing storm drainage system and construction and improvements thereto, NAS, Whiting; Spec. 32608; NOy 71029.

NORTH MIAMI—Weathermaster Manufacturing Co., Limited, Opalocka, let contract to Burk Construction Corp., Inc., Bay Harbor Island, at $213,300, for warehouse.

NORTH MIAMI BEACH — Dade County Board of Public Instruction, Miami, let contract at $60,439 to Perry E. Willits, Inc., Miami, for addition and alterations to Fulford Elementary School.

OPALOCKA — Navy Dept., Public Works Office, Charleston, S. C., let contract to Giffen Industries, Inc., Coral Gables, at $78,557, for roof repairs for various buildings, U. S. Marine Corps Air Station; Spec. 34086; NOy 72945.

OPALOCKA — Navy Dept., Public Works Office, Charleston, S. C., let contract to E. P. Austin & Co., Miami, at $69,585, for asbestos siding for various buildings, U. S. Marine Corps Air Station; NOy 72948; Spec. 34089.

ORLANDO — General Services Administration, Public Buildings Service, let contract to Templin's, Inc., Lakeland, at $208,484, for horticultural field station, U. S. Department of Agriculture.

ORLANDO—Orange County Board of Public Instruction let contract at $72,750 to H. J. High for Lake Como Elementary School.

ORLANDO—Tupper Corp. and its affiliate, Tupperware Home Parties, Inc., acquired

1,000-acre site for $150,000 factory and office building, with land and equipment; total investment approximately $1,125,000.

PENSACOLA — Navy Dept., Public Works Office, let contract to Maultsky & Sutton, Pensacola, at $78,914, for extension of utilities, NAAS; Spec. 32899; NOy 71330.

PENSACOLA — Medical Center, Inc., received low bid of $448,375 from Dyson & Co., for medical center.

SARASOTA — Housing Authority received low bid of $619,063 from Shelby Constr. Co., New Orleans, for housing project.

SOUTH MIAMI — Donass Realty, Inc., received low bid of $100,825 from Edwards Constr. Co., Coral Gables, for store building.

WEST PALM BEACH—Corps of Engineers received low bid of $392,495 from Cleary Bros. Constr. Co. for structures 5A-E, 5A-W, 5A-S, including gates, embankments and other work, west of West Palm Beach, Fla., Central & Southern Florida Flood Control Project.

WEST PALM BEACH — Corps of Engineers, Jacksonville, let contract to Burton Walker Construction Co., Plant City, at $216,407 for rehabilitation of pavement, Palm Beach International Airport; Inv. ENG-08-123-52-139.

WEST PALM BEACH — Corps of Engineers, Jacksonville, let contract to Edelblut Construction Co., West Palm Beach, at $733,171, for Phase 3—rehabilitation of 64 buildings, Palm Beach International Airport; ENG-08-123-52-146.

WEST PALM BEACH — Corps of Engineers, Jacksonville, received low bid from Cromer & Dent, DelRay Beach, at $72,912, for rehabilitation of drainage pump station, Palm Beach International Airport; ENG-08-123-52-148.

WINTER PARK—Orange County Board of Public Instruction let contract at $73,378 to H. J. High, Orlando, for addition to Killarney Elementary School.

GEORGIA

Proposed military construction program for Georgia includes the following: Hunter Air Force Base, Savannah, $6,137,000; Moody Air Force Base, Valdosta, $2,112,000; Dobbins Air Force Base, Marietta, $1,083,000.

ALBANY—Corps of Engineers, Savannah, let contract to Southern Construction Co., Augusta, at $873,998, for Airmen's barracks, mess and administration building and warehouse, Turner Air Base.

ALBANY—Navy Dept., Public Works Office, Naval Base, S. C., let contract to Grannis & Sloan, Thompson & Street and Wattinger, Charlotte, N. C., at $1,631,900, for site preparation and construction of mess hall, barracks, administration building and gate house, and entrance facilities for Marine Corps Depot of Supplies; NOy 70664.

ATHENS—University of Georgia, Atlanta, received low bid of $158,977 from Virginia Metal Products Co., Orange, Va., for furnishing, installing bookstacks, etc.

ATLANTA—J. M. Tull Metal Co. let contract to Van Winkle & Co., Atlanta, at $123,487, for addition to building.

ATLANTA—Roy Livingston let contract to J. J. Black & Co., Atlanta, at $116,000, for parking garage addition.

ATLANTA — Northside Methodist Church Congregation received low bid of $65,470 from Jiroud Jones & Co. for church building.

ATLANTA — Park Avenue Baptist Church Congregation received low bid of $119,398 from Nonnemaker-Clayton Constr. Co., Atlanta, Ga., for Sunday School building.

ATLANTA — Alterman Brothers received low bid from Herrman Constr. Co., Atlanta, at $68,682, for preserving plant.

ATLANTA—Young Women's Christian Association let contract to Mion Construction Co. at $775,000 for central YWCA building.

AUGUSTA—City let contract at $63,108 to Newman Brothers Co., Inc., for educational building.

BAINBRIDGE—Department of Public Welfare, Atlanta, received low bid from Jack Culpepper, Tallahassee, at $108,000, for warehouse facility, Factory for the Blind.

BLACKSHEAR — Pierce County Hospital Authority received low bid from Delta Construction Co. & Paul Keasling, Waycross, at $262,956, for hospital.

BRUNSWICK—City received low bid from S. J. Curry & Co., Albany, at $927,927, for hospital.

CALHOUN — Gordon County Hospital Authority received low bid from Ray M. Lee Co., Atlanta, at $549,727, for Gordon County Hospital.

CAMP GORDON—Corps of Engineers, Savannah, let contract to Claussen-Webster, Augusta, at $1,829,967, for troop spaces and facilities.

CAVE SPRINGS — State Board of Education, Atlanta, received low bid of $102,000 from Rogers Constr. Co., Rome, for laundry building, inside utilities main shop, boiler rooms, and J. T. Ledbetter, Rome, at $96,418, for athletic field, walks and roadways, outside utilities at Georgia School for the Deaf.

CEDARTOWN — Polk County Board of Commissioners received low bid from Perry Lamar Construction Co., Thomaston, at $58,950, for Health Center.

COLUMBUS — YMCA received low bid of $503,500 from Williams Constr. Co. for addition to YMCA building.

CORDELE—Crisp County Hospital Authority received low bid from S. J. Curry & Co., Albany, at $607,000, for Crisp County Hospital.

DALTON—Board of Education let contract at $139,900 to Smith & Wrinkle for addition to Fort Hill School.

FORT BENNING—Corps of Engineers, Savannah, let contract to Kahn & Jackson, Columbia, S. C., at $165,665, for 18-inch water main.

FORT VALLEY — City let contract at $241,250 to Green & O'Donnell, Dalton, for sewerage system improvements.

GRACEWOOD—State Department of Welfare, Atlanta, let contract at $257,726 to Hardin & Traver, Atlanta, for dormitory for Georgia Training School.

MACON — State Board of Education, Atlanta, received low bid of $418,400 from Stillwell Constr. Co. for School for the Negro Blind Children.

MACON—Navy Dept., Public Works Office, Charleston, S. C., received low bid from Jackson-Brittain Co., Savannah, at $163,000, for additional buildings, U. S. Naval Ordnance Plant.

MARIETTA—Board of Education received low bid of $197,770 from D. P. Page, Chamblee, for Lockhead School.

MARIETTA — Corps of Engineers, Savannah, let contract to Armco Drainage & Metal Products Corp., Atlanta, at $162,842, for furnishing, fabricating and erection of St. Mfg. Bldgs., Dobbins Air Base; ENG-09-133-52-87.

OCILLA—Irwin County Hospital Authority received low bid from Delta Constr. Co. & Paul H. Keasling, Waycross, at $254,899, for hospital.

SAVANNAH—Corps of Engineers received low bid from Cecil's, Inc., Spartanburg, S. C., at $3,065, Schedule 1 and 2, airmen's barracks, mess and administration, and from Ralph Didschuneit, Candler Bldg., Atlanta, at $132,717; Schedule 3, telephone building, and from Byck-Worrell Co., Savannah, at $2,921,692; on Schedule 4, bidder design, Hunter Air Base.

SAVANNAH — Housing Authority let contract to Byck-Worrell Constr. Co., Savannah, Ga., at $1,735,847, for housing project.

KENTUCKY

Tennessee Gas Transmission plans 107 miles of pipeline in parts of Texas, Louisiana, Kentucky, Ohio and Pennsylvania, parallel to existing system; also seeks authority to build new facilities from Southwest to U. S. Canadian border; cost, $44,000,000.

House passed bill authorizing construction of hydro-electric power plant at Cheatham Dam on Cumberland River, cost $18,200,000.

PADUCAH—City is planning a program of community facilities expansion to include storm and combination sewers, improvements to water system, street improvements and additional police and fire facilities, cost estimated $6,390,377.

PADUCAH—City has grant allocation of $1,302,700 for storm relief sewer.

LOUISIANA

St. Martin Parish School Board, St. Martinville, let contract at $357,570 to Robert Angelle, Breaux Bridge, for following schools: Cecelia Elementary School, Cecelia; addition and alterations to St. Martinville School, St. Martinville, and renovating elementary school at Parks.

ATHENS—City approved $150,000 bond issue for new modern negro school plant.

BATON ROUGE — St. Anthony of Padua Congregation received low bid of $286,576 from Charles Carter & Co., Inc., Baton Rouge, for church building.

BOSSIER CITY—Bossier City Council plans voting August 19 upon $2,000,000 bond issue for new municipal waterworks.

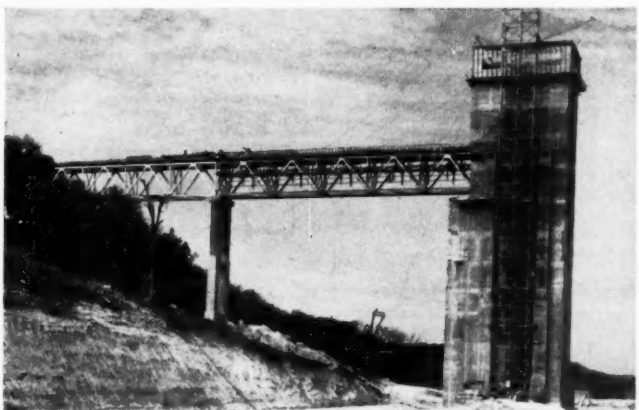
FERRIDAY — Concordia Parish Consolidated School District No. 1 plans $315,000 bond issue for schools.

JEFFERSON PARISH—Water Board District 5, Waggaman, let contracts for water distribution system as follows: Hebert Brothers, Plaquemine, for water distribution system at $311,220; Pittsburgh-Des Moines Steel Co., Dallas, on steel storage tank and reservoir at $38,260; Bartley & Binnings, New Orleans, on pumping stations at $39,605, and Bruns Bridge Co., New Orleans, for foundations for elevated tank and storage reservoir at $10,720.

LAKE ARTHUR — Housing Authority let contract to T. Miller & Son at $212,777 for housing project.

LAKE CHARLES — Corps of Engineers, Galveston, Tex., let contract to J. M. Brown Construction Co., Shreveport, at $833,743, for

(Continued on page 24)



Outlet Works For Belton Dam Almost Complete—This month the Fort Worth District, Corps of Engineers, under whose direction the $17,750,000 Belton Dam project is being constructed, reported virtual completion of the 200-foot high concrete outlet works tower (right) and the 22-foot diameter discharge conduit, foreground. A contract for the completion of the earthen embankment is now getting underway.

The Belton Dam and Reservoir project is located on the Leon River, a Brazos River tributary, near Belton, Texas.

Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

(Continued from page 23)

aircraft and base shops, Lake Charles Air Base; ENG-41-243-52-36.

LAKE CHARLES—Corps of Engineers, Galveston, Tex., let contract to J. M. Brown Construction Co., Shreveport, at $85,209, for armament—electronics repair shop and AIO shops, Lake Charles Air Base; ENG-41-243-52-78.

LAKE PROVIDENCE—Board of Governors of Prison District No. 1 of the Sixth Judicial District of Louisiana received low bid from Rannie Terral, Farmerville, at $77,000, for prison barracks on Prison Farm.

LULING—Llon Oil Co., El Dorado, Ark., received low bid from Aluminous Corp., Houston for new Nitrogen Fertilizer plant, cost $30,000,000.

MAMOU—Mayor and Board of Aldermen will receive bids July 18 on $376,000 bond issue, which includes $56,000 for constructing sewers and sewerage disposal works and $320,000 for combined natural gas and sewerage system.

MINDEN—Webster Parish School Board plans $105,000 bond issue for schools.

NEW IBERIA—Iberia Parish School Board plans $1,250,000 bond issue for schools.

NEW ORLEANS—Orleans Parish School Board let contract at $192,780 to Haase Construction Co., Inc., for Eleanor McMain Junior High School renovations, and Upham Construction Co., Inc., at $98,256, for renovation for McDonogh No. 6 Elementary School.

NEW ORLEANS—Orleans Parish School Board let contract at $333,900 to Keller Construction Corp. for renovation of John McDonogh High School.

NEW ORLEANS—Orleans Parish School Board received low bid of $259,610 from Cucchiara Brothers, Inc., Hammond, for Sophie B. Wright Junior High School renovations and Lionel F. Favret Co., Inc., New Orleans, at $52,725, for J. W. Johnson School.

NEW ORLEANS—First Baptist Church Congregation let contract to B. P. Farnsworth & Co., Inc., at $1,188,000, for church and educational building.

NEW ORLEANS—St. Rita's Church let contract to Cervais F. Favrot Co., Inc., for new church and rectory, cost, $685,000.

NEW ORLEANS—Board of Commissioners received low bid of $170,617 from Keller Construction Corp. for timber and concrete deck wharf.

NEW ORLEANS—Laclede Steel Co. contemplates expenditure of $484,000 for production facilities for structural steel products.

NEW ORLEANS—Corps of Engineers, Galveston, Tex., received low bid from R. P. Farnsworth & Co., Inc., Baton Rouge, La., at $1,325,000, for additional engine test cell building, etc., Michoud Ordnance Plant; Inv. ENG-41-243-52-102.

POINTE COUPEE PARISH—Corps of Engineers let contract to McClorstin Construction Co. at $229,900 for clearing Morganza Roadway, No. 52-212.

RAPIDES PARISH—Corps of Engineers received low bid of $422,781 from W. R. Aldrich & Co., Baton Rouge, for Bayou Rigolette Floodgate.

SHREVEPORT—Corps of Engineers, Little Rock, Ark., received low bid from S. & L. Constr. Co., Dallas, Tex., at $1,431,506, for airmen's dormitories and mess and administration buildings, Barksdale Air Base; at $1,618,306 on Additive A; Inv. 52-38.

SHREVEPORT—Young Women's Christian Association received low bid of $658,000 from McMichael Const. Co., Shreveport, La., for YWCA building.

SHREVEPORT—Sisters of Charity of the Incarnate Word announced plans for a new 308-bed hospital to replace present T. E. Schumpert Memorial Sanitarium; estimated cost between $3,500,000 and $4,000,000.

THIBODAUX—City sold $450,000 bond issue to Equitable Security Corp., White, Hattier & Sanford, Scharff & Jones & Barrow, Leary & Co., for water improvements.

VERMILION PARISH—Corps of Engineers received low bid of $211,045 from F. J. J. Sloat Dredging Co., Slidell, La., for dredging Vermillion River.

WAGGAMAN—Water Board of Water District No. 5, Jefferson Parish, sold $250,000 bond issue to Scharff & Jones, New Orleans, for waterworks.

MARYLAND

ABERDEEN—Corps of Engineers, Baltimore, plans advertising for bids about Nov. 1 for climatic testing facilities, Aberdeen Proving Ground; estimated cost from $1,000,000 to $3,000,000.

ABERDEEN—Corps of Engineers, Baltimore, plans expansion of transonic range facilities, Aberdeen Proving Ground; estimated cost $100,000 to $500,000.

ABERDEEN—Corps of Engineers, Baltimore, plans additions to fire control building, Aberdeen Proving Ground; estimated cost $500,000 to $1,000,000.

ABERDEEN—Corps of Engineers, Baltimore, received low bid from Hadley Contracting & Construction Co., Philadelphia, Pa., at $226,020, for improvements to Station Hospital, Aberdeen Proving Ground; Ser. ENG-18-020-52-53.

ANNAPOLIS—Anne Arundel County Commissioners is considering plans for sewage disposal facilities in northern end of county, estimated cost $1,250,000.

BALTIMORE—Board of Estimates allotted $175,000 for Patterson Park athletic field project.

BALTIMORE—Board of Estimates approved submission to voters in November a $6,000,000 bond issue for new city jail and $1,500,000 bond issue for five more Enoch Pratt Library Branches.

BALTIMORE—Board of Estimates approved submission to voters in November a $17,500,000 bond issue for water.

BALTIMORE—Board of Estimates approved submission to voters in November a $9,000,000 bond issue for additional port improvements.

BALTIMORE—Board of Estimates approved submission to voters in November a $5,000,000 bond issue for sewer extensions and improvements.

BALTIMORE—Board of Estimates approved $8,000,000 school loan to be submitted to voters in November.

BALTIMORE—Board of Estimates asked to provide funds for remodeling of Northeast Market, cost between $150,000 and $175,000.

BALTIMORE—Board of Estimates let contract to Kirby & McGuire at $415,347 for alterations to building, as future headquarters for Department of Public Welfare.

BALTIMORE—The Baltimore Salesbook Co. plans erection of three-story addition, cost approximately $500,000.

BALTIMORE—Northwood-Appold Methodist Church let contract to Armiger Const. Corp. at $125,000 for church addition.

BALTIMORE—Department of Public Improvements received low bid of $96,400 from Blair & Sons Co., Inc., for building alterations and renovation at Coppin State Teachers College.

BALTIMORE—Senate Appropriations Committee approved $600,000 for harbor and channel improvements.

BALTIMORE COUNTY—Baltimore County Commissioners sold $5,000,000 bond issue to Bankers Trust Co., New York, for public school facilities and $1,500,000 for public highway facilities and $5,000,000 for metropolitan bonds.

BALTIMORE COUNTY—County Commissioners, Towson, let contract at $89,480 to Charles J. Spielman Co., Inc., Baltimore, for water mains, sanitary sewers and storm drains.

BALTIMORE COUNTY—Board of County Commissioners received low bid of $457,173 from Lawrence Constr. Co., Inc., Baltimore, for Malden Choice Elementary School.

BEL AIR—Harford County Commissioners studying proposal for $160,000 health and welfare center.

CARDEROCK—Navy Dept., Public Works Office, Washington, D. C., received low bid from F. H. Martell Co., Washington, D. C., at $1,648,800, for wind tunnel; Spec. 32876.

COLLEGE PARK—University of Maryland plans $4,600,000 school program, which includes $3,000,000 for student activities, physical education and auditorium building; $700,000 for student union building, and $900,000 for ten fraternity and sorority house.

DUNDALK—St. Mildred & St. Adrian Parishes received low bid of $649,875 from E. Eyring & Sons Co. for elementary school and convent.

EDGEWOOD—Post Quartermaster, Purchasing and Contracting Office, Baltimore, received low bid from T. B. Gatch & Sons, Inc., Baltimore, at $118,720, for resurfacing existing roads, Army Chemical Center; Ser. 18-102-52-205.

(Continued on page 26)

Alabama Lists Low Bids of $3,763,256.68

Alabama last month received bids totaling $3,763,256.68 for thirty-six highway projects. Listed by counties, they are:

Walker County—FA-S-12(2), .681 mile grading, drainage and bituminous treatment on the road from Cordova toward Gorgas. Moss-Thornton Co., P.O. Box 127, Leeds, Ala., $80,508.28.

Autauga County—FA-S-16(3) & 446(1), 4.497 miles base and bituminous treatment on the roads from Pyron to Marbury and from Pine Level east to the Elmore County line. J. R. Bryant Contracting Co., 121 Molton St., Montgmery, Ala., $381,329.30.

Cullman & Morgan Counties—F.I.-82 (2), 83(3) & 151(3) Proposals "B" & "C". Crushing aggregate and grading, drainage and concrete pavement on 1.226 miles and concrete pavement on 6.859 miles on the Cullman-Decatur Rd. Proposal "B" roadway, Southern Roadbuilders, Inc., Augusta, Ga., $743,199.60. Proposal "C", crushing aggregate, Birmingham Slag Co., P.O. Box 155, Birmingham, Ala., $78,-079.76.

Wilcox County—Project No. 152. 3.188 miles bituminous surfacing in the town of Camden. J. R. Bryant Contracting Co., 121 Molton St., Montgomery, Ala., $29,-900.00.

Cleburne County—F.A.-S-197 (3), 10.533 miles base and bituminous treatment on the road from Micaville to Alabama 46 at Union Hall. J. B. Maynard, Alex City, Ala., $116,015.16.

Covington County — FA-S-200(2) & SACP-7167-A, 12.009 miles base and bituminous treatment on the roads from Yellow River to Wing and South toward Oaky Streak. Joe F. Walters, Box '96, Troy, Ala., $78,717.85.

Coleman County—FA-S-2091(3), 567(1) & SACP-1125-A, 7.554 miles base and bituminous treatment on the Hanceville-Walter & Hanceville-Arkadelphia Roads. W. W. Townsend Excav. Contractor, Inc., 1015 19th Ave., East, Tuscaloosa, Ala., $120,981.19.

Calhoun County—F.I.291(2), Proposals "C" and "D", 1.763 miles grading, drainage, bituminous treatments, plant mix and bridge on the Anniston Bypass. J. W. Gwin, Jr., 1803 Comer Bldg., Birmingham, Ala., $197,154.23.

Dallas County — SACP-302-CND, 4.231 miles bituminous treatment on the Tasso-Mollett Bend Road and town of Orrville Streets, Joe F. Walters, Box 96, Troy, Ala., $44,283.37.

Greene County — SACP-328A and 330-CND, 5.881 miles bituminous treatment on free county roads. Couch Construction Co., Box 859, Dothan, Ala., $6,833.65.

Fayette County — SACP-332-A, 344-A, 345-A, and 350-A, 16.155 miles bituminous treatments on four county roads. E. J. Cobb Construction Co., Box 175, Montgomery, Ala., $18,846.00.

Dallas County—SACP-382-B and 3113-A, 3.438 miles bituminous treatment on the Old Felix Road and the Range Line

(Continued on page 48)

THINGS MOVE FASTER when a "QUICK-WAY" is on the Job!

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FASTER TO and FROM the JOB • 50 M.P.H. on the Highway

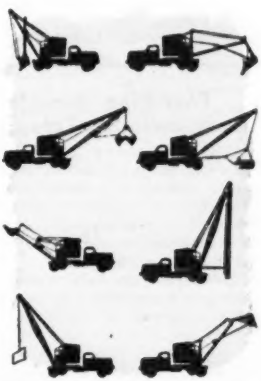
MORE WORK FINISHED ON THE JOB FASTER

You Make PROFITS FASTER

Job Tickets tell the story...*more hours of work each day...more work per hour...lower operating costs...lower maintenance costs*...it all adds up to *bigger profits for you.*

Yes, *QUICK-WAYS make faster profits*—give you fast truck speed between jobs—eight money making attachments—fast working speeds—4 models from 3 to 10 ton crane capacity.

—and quality construction too—all steel for strength and lightness—accurate balance—high capacity to weight ratio. More parts are interchangeable and easy to get at, which simplifies maintenance and repairs. All parts deliver their capacity rating and more. This fine construction means longer life—more profits on a small investment. They're economical to buy. Ask your distributor for a free demonstration.



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NORTH CAROLINA EQUIPMENT CO.
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RAY BROOKS MACHINERY CO.
Montgomery and Mobile, Alabama

RAY BROOKS TRUCK & TRACTOR CO.
Pensacola, Florida

TRACTOR & EQUIPMENT CO., INC.
Birmingham and Decatur, Alabama

Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

(Continued from page 24)

EDGEWOOD—Corps of Engineers, Baltimore, plans advertising for bids about July 15 for additions to steam distribution system, Army Chemical Center; cost estimated $100,000 to $500,000.

EDGEWOOD — Corps of Engineers, Baltimore, plans advertising for bids about Aug. 15 for biophysics laboratory, Army Chemical Center; cost estimated at less than $100,000.

ELLICOTT CITY — Department of Public Improvements, Baltimore, let contract to W. H. Ward Contractors, Baltimore, at $188,348, for headhouse, addition to motor vehicle storage building, Military Department.

FORT GEORGE G. MEADE—Post Quartermaster, Purchasing and Contracting Office, Baltimore, let contract to Kesting Constr. Co., Baltimore, at $119,478, for deferred maintenance work on miscellaneous mobilization buildings; Spec. 18-102-52-166.

HAGERSTOWN—Washington County Commissioners have option on a site adjacent to Washington County Hospital, for State's projected $3,000,000 chronic disease and tuberculosis hospital.

PATUXENT RIVER — Navy Dept., Public Works Office, received low bid from Cayuga Foundation Corp., New York, N. Y., at $475,000, Item I, for aviation fuel storage, Naval Air Station; Spec. 32716.

PRINCESS ANNE—Somerset County Board of Education received low bid of $499,880 from J. Roland Dashiells & Sons for junior-senior high school.

SALISBURY—Wicomico County Board of Education let contract at $1,566,927 to William F. Sutter, Nescopeck, Pa., for Wicomico County high school No. 13-5.

SYKESVILLE—Dept. of Public Improvements, Baltimore, let contract to John Matricciani & Son, Baltimore, at $258,395, for sewage treatment plant, Springfield State Hospital.

MISSISSIPPI

ASHLAND — Board of Supervisors plans voting on $80,000 bond issue for garment manufacturing plant to be occupied by the Ashland Manufacturing Co.

BILOXI — Housing Authority let contract to John Low, Jr., Laurel, Miss., at $98,500, for 20-unit F.H.A. defense housing project.

BROOKHAVEN—Mayor and Board of Aldermen received low bid from Shelby Construction Co., New Orleans, La., at $491,788, for new plant building for Johnston Lawn Mower Corp.

COLUMBUS — City Council sold $100,000 airport bond issue to Cady & Co., Columbus.

GREENVILLE — Board of Supervisors of Washington County selected N. W. Overstreet, Jackson, as Archt. for nurses home for new Washington County Hospital, cost $226,865.

GRENADA COUNTY—Corps of Engineers, Vicksburg, received low bid of $61,451 for 1,-990,000 cu. yds. of excavation, and 16.3 mi. of clearing and snagging, from Grimmett, James & Traylor, Inc.

GULFPORT — Deere and Co. plans new plant, cost $17,500,000.

INDIANOLA—Board of Trustees of Indianola Municipal Separate School District received low bid of $297,039 from J. E. Pyle, Little Rock, Ark., for junior-senior high school building.

LOUISVILLE—Board of Public Utilities received low bid of $258,159 from M. T. Reed Construction Co. for sanitary sewer extensions; sewage treatment plant and lift stations.

LOUISVILLE — First Baptist Church received low bid of $221,122 from B. L. Knost, Jackson, Miss., for church building.

McCOMB—Croft Steel Products, Inc., plans new, $150,000 manufacturing plant.

OXFORD — Board of Supervisors of Lafayette County let contract to Central Construction Co., Inc., Philadelphia, at $72,480, for additions and alterations to Lafayette County Courthouse.

OXFORD—First National Bank, Memphis, Tenn., purchased $100,000 in bonds to finance renovation of courthouse.

STARKVILLE — City plans $200,000 bond issue for building gymnasium, bank hall, purchasing additional ground, renovating old gymnasium and making cafeteria for Starkville High School.

TAYLORSVILLE—Board of Trustees of Taylorsville Consolidated School District, Smith County, received low bid of $107,700 from Currie & Corley, Raleigh, for remodeling, repairs and additions to elementary and high school.

WINONA — Winona Separate School District let contract at $51,915 to Central Construction Co., Philadelphia, for 6-classroom Winona Colored High School.

YAZOO CITY — The National Chemical Co. will build ammonium nitrate plant, estimated cost $7,200,000.

MISSOURI

AUGUSTA — Reorganized School District No. 1, St. Charles County, Board of Education, let contract at $65,607 to Pfez Lewis & Son, Salisbury, for additions to school.

JENNINGS — Northland Shopping Center, Inc., has preliminary plans in progress for shopping center; cost approx. $10,000,000.

LEMAY—Board of Education, Emil H. C. Bernard, Supt., approved $150,000 bond issue for school improvements.

NORMANDY — Normandy - Consolidated School District let contract at $77,489 to Juengel Construction Co., Affton, for Bel Ridge Primary School.

RICHMOND HEIGHTS—Stix, Baer & Fuller Co., St. Louis, Mo., plans county shopping center in Richmond Heights, cost, $8,-383,700.

ST. LOUIS—City Board of Public Service, let contract to Albers Construction Co., at $109,504, for fire station No. 19.

ST. LOUIS—General Services Administration, Public Buildings Service, Kansas City, received low bid from J. S. Alberici Constr. Co. at $62,259 for post office and post office garage extension and remodeling.

ST. LOUIS — Hanneke Hardware Co. let contract to Fred Hof for store building addition, cost $50,000.

ST. LOUIS—Missouri Baptist Hospital received low bid from Dickie Construction Co. at $456,954, or $459,883 without escalation, for addition to hospital.

ST. LOUIS—City Board of Public Service, has plans in progress for alterations, rehabilitation and modernization or administration and ward buildings, Max C. Starkloff, city hospital; appropriation of $1,000,000.

ST. LOUIS—Kinloch Board of Education, St. Louis County, has plans in progress for additions and alterations to Dunbar School; estimated cost $100,000.

ST. LOUIS—Board of Education let contract at $34,754 to Juengel Construction Co., Affton, for addition to Robert Avenue School.

ST. LOUIS—Flori Pipe Co. let contract to Swan Construction Co., Affton, for factory, cost approximately $35,000.

SENATH—Consolidated School District No. 8, Board of Education, let contract at $45,973 Semo Construction Co., Sikeston, for grade and high school.

UNIVERSITY CITY—Board of Education received low bid of $27,350 from Windsor Heating & Air-conditioning Co. for new boilers at Flynn Park School, Harvard School.

UNIVERSITY CITY — City Elder Gunter, City Mgr., let contract to Sodemann Heat & Power Co., at $21,489, for remodeling heating system and to Otis Elevator Co., at $30,-185, for installing new elevator, City Hall.

NORTH CAROLINA

Corps of Engineers, Wilmington, announced plans and specifications are being prepared by Robert and Co., Atlanta, Ga., Archts.-Engrs., for ammunition outloading terminal, on the Cape Fear River near Sunny Point; estimated cost $23,000,000.

ASHEVILLE—Women's Division of Christian Service of the Board of Missions & Church Ext. of the Methodist Church, New York, let contract at $174,975 to Quality Construction Co. for dormitory for Allen high school.

CAMP LEJEUNE — Navy Dept., Public Works Office, received low bid from McCrary Piping & Heating Co., Charleston, S. C., at $126,000, for relocation of liquid petroleum gas plant, Marine Barracks; Spec. 31158; NOy 70645.

CAMP LEJEUNE — Navy Dept., Public Works Office, let contract to H. L. Coble Construction Co., Greensboro, at $5,393,000, for 12 quartermaster warehouses; Spec. 32218.

CAMP LEJEUNE — Navy Dept., Public Office, received low bid from T. A. Loving & Co., Goldsboro, at $1,658,750, for operations hangar; NOy 70703.

CAMP LEJEUNE — Navy Dept., Public Office, let contract to Barrus Construction Co., Kinston, at $60,400, for rehabilitation of existing rock surfaced streets, drives and parking areas, Camp Geiger (Tent Camp Nos. 1 and 2); Spec. 34071.

CHARLOTTE—Singer Sewing Machine Co. announced plans for a $300,000 building.

CHARLOTTE — Horne-Wilson, Inc., plans office and warehouse, cost $300,000.

CHARLOTTE — Housing Authority postpones sales of bonds in amount of $6,007,000 until an undetermined date.

CHARLOTTE—Belk Bros. Co., plans improvements to department store, cost, $3,-000,000.

DURHAM—Dr. and Mrs. Max Schiebel received low bid of $130,500 from George W. Kane, Durham, N. C. for Physician and Surgeons Bldg.

DURHAM — Board of Education received low bid of $60,115 from C. A. Herrin, for 10 classroom addition Merrick-Moore School.

DURHAM — Housing Authority received low bid of $1,423,387 from Cecil's Inc., Spartanburg, for housing project, NC 13-2.

FORT BRAGG—Corps of Engineers, Wilmington, let contract to Erie City Iron Works at $533,295 for 3 steam generators and complementary equipment; ENG-31-075-52-12.

FORT BRAGG—Corps of Engineers, Wilmington, received low bid from F. D. Cline

Four-Pipe Structure Installed on Turnpike

The quadruple multi-plate pipe installation was made on the Oklahoma City-Tulsa turnpike in Lincoln county, Okla. The structure consists of four 168-inch-diameter Armco pipes with ends cut on a combination skew and bevel to fit the slope of the embankment.

Individual pipes are assembled from heavy gage corrugated galvanized structural units curved to the proper radius. Assembly was by field bolting with high tensile steel bolts.

Structures of this type are particularly adaptable under high embankments since their flexibility allows adjustment to stresses developed by unusual load conditions.

The installation will be buried 25 feet under the turnpike, scheduled to be placed in use around the beginning of 1953, according to General Manager H. E. Bailey.

Prime contractor for the job was the Hunter Construction Co. of Ada, Okla.

Quadruple multi-plate Armco pipe installed on Oklahoma Turnpike in Lincoln County, Okla.

Paving Co., Raleigh, at $259,740 for motor pool improvements and street surfacing; ENG-075-52-17.

GASTONIA — Central Yarn & Dyeing Co. has expansion program underway on production and research facilities; cost approximately $250,000.

GOLDSBORO—State Hospital let contract to R. N. Rouse & Co., Goldsboro, at $86,398 for alterations to Faison Building.

GREENSBORO—A & T College let contract at $655,945 to W. H. Weaver Construction Co., for library building.

GREENSBORO—A & T College let contract at $190,000 to West Building Co., for home economics building.

HIGH POINT — Presbyterian Home for Aged plans new section of Home, cost, $360,000.

HIGH POINT—High Point Memorial Hospital plans 100-bed nurses' home, cost $400,000.

HILLSBORO—Board of Commissioners of Orange County received low bid from Coltrane-Graham Construction Co., High Point, at $247,650 for courthouse.

JACKSONVILLE — Board of Commissioners of Onslow County let contract to Little Construction Co., Charlotte, at $430,444 for 50-bed hospital.

KINSTON—Board of Trustees of Kinston Graded School District received low bid of $283,283 from O. L. Shackelford, for additions to Adkin High School and J. H. Sampson Elementary School.

LAURINBURG — McNair Investment Co. let contract to Consolidated Construction Co., Lumberton, at approximately $104,000 for seed warehouse.

RALEIGH—Board of Public Buildings and Grounds let contract to Strong & Harmon, Raleigh, at $184,990 for erection of textbook and archieves building.

RALEIGH—State received low combination bid of $173,000 from George W. Kane, Durham, for alterations to State Library & State Labor Building.

ROCKINGHAM — A. E. Whittemore let contract to Jesse Pe Phifer, at $82,912 for store building.

SALISBURY — City, Ernest L. Hardin, Mayor, let contracts for raw water facilities, Section 4, raw water pump station, Lee Construction Co., Charlotte, $126,999; Section 5, electrical, Electric Service Co., Hickory, $26,520; Section 6, pumping equipment, Fairbanks-Morse & Co., Charlotte, $20,988.

SHALLOTTE — Brunswick Electric Membership Cooperative let contract to R. E. Hayes Wilmington, at $79,212 for headquarters bldg.

STANLEY—City let contracts for waterworks improvements, A. P. White & Assoc., Charlotte on Division I, $96,600; P. T. Withers Construction Co., Gastonia, on Division II at $40,210 and Division III $8,500; Howard L. Stilliwell, Charlotte, Engr.

SURRY COUNTY — Board of Education, Dobson, let contracts for following schools: Franklin High School, Interstate Construction Co., Charlotte, for $137,490; Pilot Mountain High School, Interstate Construction Co., $141,858; Beulah School, H. C. Burcham & Sons, Elkin, $53,077; Westfield School, J. H. Kiziah, Hickory, $33,220.

WEEKSVILLE—Navy Department, Norfolk, Va., received low bid from Brown-Coble Construction Co., Lexington, at $892,863 for airfield paving, Naval Air Facility; Spec. 33699; NOy 73561.

WHITEVILLE — Board of Commissioners of Columbus County received low bid from East Carolina Construction Co., Dunn, at $79,600 for agriculture building.

WINSTON-SALEM—Winston-Salem Teachers College let contract at $244,900 to Fowler-Jones Construction Co. for physical educational building and renovation of vocational building.

OKLAHOMA

ALTUS — Corps of Engineers, Tulsa, received low bid from S. P. Barker, Quanah, Tex., at $259,710 for rehabilitation of existing building, Altus Air Base; Inv. ENG-34-066-52-70.

ARDMORE—Corps of Engineers, Tulsa, received low bid from Burton Miller Construction Co., Ardmore, at $296,100 on Lot 1 and at $186,000 on Lot 2, for rehabilitation of existing building, Ardmore Air Base; Inv. 34-066-52-71.

FORT SILL—Corps of Engineers, Tulsa, received low bid from R. P. Farnsworth & Co., Baton Rouge, La., at $6,357,478 for barracks; ENG-34-066-52-69.

LAKE TEXHOMA — Board of Regents, University of Oklahoma, received low bid of $66,264 from Danielsen Construction Co., Denison, for Lake Texhoma Biological Station and dormitory.

NORMAN — Navy Department, New Orleans, La., let contract to Burton-Miller, Ardmore, at $144,000 Item 2, for rehabilitation of fourteen buildings, Naval Air Technical Training Center; Spec. 33277; NOy 71876.

NORMAN — Navy Department, New Orleans, La., received low bid from Frederickson-Parks, Oklahoma City, at $75,636 for rehabilitation of roads and bridges, Naval Air Technical Training Center; Spec. 33284; NOy 71884.

NORMAN — Navy Department, New Orleans, La., let contract to Burton-Miller, Ardmore, at $144,000, Item 2, for rehabilitation of five MEB buildings, Naval Air Technical Training Center; Spec. 33283; NOy 71882.

NORMAN — Navy Department, New Orleans, La., received low bid from Builders Construction Co., Oklahoma City, at $309,194 on Item 1 and at $347,603 on Item 2, for rehabilitation of ten MEQ buildings, Naval Air Technical Training Center; Spec. 34723; NOy 73689.

NORMAN — Navy Department, New Orleans, La., let contract to Builders Construction Co., Norman, at $153,284 for rehabilitation of a dispensary, mess hall and barracks building and fire exits in 25 buildings, Naval Air Technical Training Center; Spec. 34732; NOy 73702.

TULSA—Suburban Development Company plans 253 house addition in northeast Tulsa, cost, $2,150,000.

SOUTH CAROLINA

BATH—Board of Trustees received low bid at $234,000 from George L. Fuller Construction Co., Augusta, Ga., for Jefferson Elementary School.

CAYCE — Board of Trustees, Brookland-Cayce School District 2, received low bid of $102,290 from H. L. Eargle Construction Co., Columbia, for elementary school building addition.

CHARLESTON — Corps of Engineers let contract to Conn Structors, Atlanta, Ga., at $247,193 for new building, Troup A, Charleston Airfield; ENG-38-081-52-31.

CHARLESTON — Corps of Engineers let contract to Conn Structors, Atlanta, Ga., at $61,600 for motor vehicle shops, Charleston Airfield; ENG-38-081-52-66.

CHARLESTON — Corps of Engineers, Charleston, let contract to Conn Structors, Inc., Atlanta, Ga., at $1,724,721 for airmen's dormitories and mess buildings, Charleston Air Base.

CHARLESTON—Navy Department, Public Works Office, Naval Base let contract to Merritt Dredging Co., Charleston, at $60,000 for maintenance dredging, Minecraft Base; Spec. 32867; NOy 71577.

CHARLESTON — Corps of Engineers, received low bid from Dickerson, Inc., Monroe, N. C., at $569,525 for roads, parking areas and railroad spur, Charleston Air Field; ENG-38-081-52-84.

COLUMBIA—Corps of Engineers, Charleston, let contract to Boyle Construction Co., Sumter, at $34,877 for extension to runways and taxiways, construction of airfield lighting and aircraft apron and removal of hazards at Congaree Air Base; ENG-38-081-52-72.

COLUMBIA—South Carolina Electric and Gas Company plans $250,000 electric transmission line between Beaufort and Yemassee.

COLUMBIA—South Carolina Natural Gas Company plans 160 mile natural gas transmission ssytem, cost, $5,000,000.

FORT JACKSON — Corps of Engineers, Charleston, received low bid from Dawson Engineering Co., Charleston, at $76,655 for alterations to meat cutting plant; ENG-38-081-52-73.

FORT JACKSON — Corps of Engineers, Charleston, received low bid from Mitchum Construction Co., Columbia, at $137,372 for QM shop building and warehouse.

GAFFNEY — Housing Authority received low bid of $927,000 from Cecil's, Inc., Spartanburg, for low rent rent housing project.

GREENVILLE — Corps of Engineers, Charleston, let contract to R. D. Cole Manufacturing Co., Newnan, at $119,430 for elevated water storage tank and connections, Donaldson Air Base; ENG-38-081-52-65.

GREENVILLE — Parker Water & Sewer Sub-District, Welcome Area, let contract at $379,654 to G. E. Moore Co., Greenwood, for water distribution system.

GREENVILLE—Trinity Lutheran Church Congregation received low bid of $84,734 from Potter-Shackelford Constr. Co., Greenville, S. C., for new parish house.

GREENVILLE — Greenville Airport Commission let contract to Morris Construction Co., Greenville, at $280,861 on School 1, to Peden Construction Co., Greenville, at $34,489 on School 2 and to Ashmore Brothers, Greenville, at $16,158 on School 3, for terminal and administration building, Municipal Airport.

HARTSVILLE — Hartsville Manufacturing Co. received low bid from C. B. Askins, Lake City, at $54,990 for addition to building.

HARTSVILLE—Darlington County School Board of Trustees let contract at $154,640 to

(Continued on page 28)

North Carolina Bids Low at $3,574,943

The State Highway Commission last month received low bids totaling approximately $3,574,943 for 198.14 miles of road improvements in twenty-six counties. The low bids were $252,456.57 under the Commission's estimate of $3,827,400.

Ten of the projects will be financed entirely from the $200,000,000 secondary road bond issue, and one other will be financed partially from bond money.

The list of projects and bids follows:

Warren-Halifax—8.62 miles of grading and paving from county road east of Inez, east via Bethlehem to N.C. 43 at Essex; Ballenger Paving Co., Greenville, S. C., $154,997;

Craven-Beaufort—18.51 miles of grading and paving from U.S. 17 north of Bridgeton, northeast to N.C. 306 approximately 400 feet southwest of intersection with N.C. 33; Nello L. Teer Co., Durham, N. C., $404,856;

Jones-Craven—6.01 miles of grading and paving from county road north of Trenton, north to Cove City; Barrus Construction Co., Kinston, N. C., $74,398;

Columbus—widening bridge over Gapway Swamp on U.S. 76 between Fair Bluff and the South Carolina State Line; Sanford Construction Co., Sanford, N. C., $47,928;

Johnston—6.73 miles of grading and paving from paved road between Princeton and Nahunta southwest of Wayne County line, north to point .5 mile south of Kenly; grading and paving, Wayne Engineering & Construction Co., Inc., Mt. Olive, N. C., $81,981; moving buildings, Bailey & Phillips, Selma, N. C., $6,700;

Guilford—2.43 miles grading and paving from N.C. 62 northeast of Archdale, north to point on paved county road east of High Point city limits; Jesse M. Coble, Greensboro, N. C., $53,401;

Guilford—2.82 miles of grading and paving from point on U.S. 158 at Forsyth-Guilford County line, northeast to Atlantic & Yadkin Railroad in Stokesdale; grading and paving, W. E. Graham & Sons, Cleveland, N. C., $150,266; moving buildings, Bare Brothers, West Jefferson, N. C., $6,750;

Chatham—5.58 miles of grading and paving on county road known as Big Meadow Road from point on N.C. 87, seven miles north of Pittsboro to Alamance County line; Dickerson, Inc., Monroe, N. C., $88,286;

Randolph—6.54 miles of grading and paving on county road known as Back Creek Road from U.S. 64 west of Asheboro, north to U.S. 311; J. K. Cecil & Son, Lexington, N. C., $109,924;

Rutherford-Cleveland—7.42 miles of grading, paving, and structures from point on N.C. 26 near intersection with county road between Sunshine and Burke County line, southeast crossing Rutherford-Cleveland County line to intersection with county road south of bridge over Duncan's Creek two miles northwest of Polkville; grading and paving, A. R. Thompson Contractors, Inc., Rutherfordton, N. C., $215,531; structures,

(Continued on page 46)

Southern Construction Projects

(Continued from page 27)

C. B. Askins, Lake City, for additions to 3 schools.

LESSLIE — Neely's Creek A.R.P. Church Congregation received low bid of $55,800 from Carl W. Mullis Lbr. Co., Lancaster, S. C., for educational building.

PARRIS ISLAND—Navy Department, Public Works Office, received low bid from Espy Paving Co., Savannah, Ga., at $59,566 for sewage pump station and rehabilitation of sanitary sewer system; Spec. 32970; NOy 71591.

PARRIS ISLAND—Navy Department, Public Works Office, Charleston, received low bid from The Elliott Co., Jeannette, Pa., at $94,910 for steam turbine-generator unit; NOy 72028.

PARRIS ISLAND—Navy Department, Public Works Office, Charleston, received low bid from Riley-Stokes Corp., Worcester, Mass., at $96,910 for steam generating unit and auxiliary; Spec. 34072; NOy 72927.

SPARTANBURG — Bethel Methodist Church Congregation received low bid of $312,876 from Fiske Carter Constr. Co., for church and Sunday School building.

SUMTER—Corps of Engineers, Charleston, let contract to Boyle Construction Co., Sumter, at $118,331 for steam distribution system, Shaw Air Base.

SUMTER—Corps of Engineers, Charleston, let contract to Boyle Construction Co., Sumter, at $80,701 for headquarters, Shaw Air Base; ENG-38-081-52-26.

SUMTER—Corps of Engineers, Charleston, received low bid from Southern Construction Co., Augusta, Ga., at $384,646 for two additional airmen's dormitories, Shaw Air Base; ENG-38-081-52-76.

W. COLUMBIA — Brookland-Cayce School District, Lexington, let contract at $112,444 to Spong Construction Co., Columbia, for addition to Lakeview School.

TENNESSEE

CHATTANOOGA — L. A. Warlick Contracting Co. submitted low bid of $510,500 for four-story wing for Erlanger Hospital.

CHATTANOOGA — Kochring Co., Milwaukee, Wisc., has acquired property; plan expenditure of $1,000,000 to put it into operation.

CHATTANOOGA — Housing Authority plans 2 low rent public housing projects, 200 units each, cost $4,500,000, for Negroes.

DYER COUNTY — Corps of Engineers, Memphis, let contract at $2,000,000 to Pioneer Construction Co., Inc., Memphis, for placement of approximately 1,050,000 cu. yd. earthwork in levee enlargement, roadway embankment and new levee vicinity Boothspoint. Inv. Ser. No. Civ-40-041-52-97.

DYER COUNTY—Corps of Engineers let contract to Ingram Construction Co., West Memphis, Ark., at $42,500 for approx. 180,000 cu. yds. excavation in construction of cutoff in Obion River.

ELIZABETHTON — Monadnock Paper Mills, Inc. Bennington, N. H., selected H. K. Ferguson Co., Inc., New York, N. Y., as Engrs., for $30,000,000 paper plant.

KNOXVILLE—State Building Commission received low bid from Johnson & Willard, Knoxville, at $1,205,000 for State Office Building and Supreme Court Building.

KNOXVILLE—University of Tennessee received low bid of $1,306,800 from Foster & Creighton, Nashville, for student activities building.

LEBANON — City let contract to Bush Building Co., Nashville, at $478,240 for natural gas distribution system.

MEMPHIS—Corps of Engineers, Memphis let contract to R. P. Farnsworth & Co., Inc., New Orleans, at $823,000 for flood wall construction, Sec. 1-C, Memphis, Wolf River and Nonconnah Creek Project.

MEMPHIS—Corps of Engineers, Nashville, received low bid from J. W. Bateson Co., Dallas, Tex., at $6,101,000 for six permanent warehouses, Memphis General Depot.

OAK RIDGE—Atomic Energy Commission received low bid of $928,279 for project A, from Boman Constr. Co., Oak Ridge, for rehabilitation 375 single family TVA type dwelling units, and project B, low bid of $208,060 from Harrison Constr. Co., Maryville, Tenn.

SWEETWATER — City approved issuance of $500,000 bond issue for industrial building.

TYNER — Department of the Army has allocated $23,019,400 for reactivation of Volunteer Ordnance Works.

TEXAS

AMARILLO — Fedway Stores, Inc., let contract to Austtin Company for retail store, cost approximately $770,000.

ARLINGTON—City approved $800,000 bond issue for water and sewer improvements and fire and police building improvements.

AUSTIN—Corps of Engineers, Galveston, received low bid from H. B. Zachary Co., San Antonio, at $697,909 for runway and taxiway extension at Bergstrom Air Base.

AUSTIN—Veterans of Foreign Wars will receive bids in July for State Headquarters Building, cost, approx. $350,000 to $400,000.

BEAUMONT — Port of Beaumont, has plans in progress for port facilities improve-

(Continued on page 46)

Falcon Dam Rises on the Rio Grande

The new Falcon Dam which is rising on the Rio Grande River, approximately 130 miles north of Brownsville, Texas, and Matamoros, Tamaulipas, is an example of how two nations can work together for the benefits of one another.

This first dam is part of the comprehensive Rio Grande international dams project, a joint undertaking of the United States and Mexico under the Water Treaty of February, 1944.

Falcon Dam will have an embankment of compacted earth and rock-filled structure, with a length of 26,294 feet and a maximum height of 150 feet. At its widest section the dam will extend approximately 1,000 feet from the upstream toe to the downstream toe.

Selected soils are being used in the construction of the earth portion of the embankment, placed in layers and compacted. Worthington Blue Brute compressors power the line drills. Upstream, the dam will be protected from wave action and erosion by rock rip-rap. An asphalt surface roadway and sidewalk are to be constructed on the crest along the entire length of the dam.

A controlled spillway is located on the left side of the river about 1,400 feet from the river channel. It is a reinforced concrete structure surmounted by six 50 by 50-foot fixed-wheel gates. The maximum design capacity of the spillway is 456,000 second feet or nearly 2½ times larger than any flood which has occurred during the period in which records are available.

In addition, separate outlet works are provided for each country. The United States outlet works consist of a concrete gravity dam adjacent to the spillway in which there are 13-foot penstocks through which water is admitted to the turbines or by-passed to the river channel below the dam.

The outlet capacity is 4,500 second feet at reservoir water surface elevation of 248 feet, and is obtained by water passing through two power turbines combined with water passing through the two 72 inch by-pass lines.

The Mexican outlet works consist of a 22-foot diameter penstock, with the upper end located in a conventional-type tower structure. At the lower end the single penstock merges into a manifold section with the water passing through the turbines and by-pass line to the river.

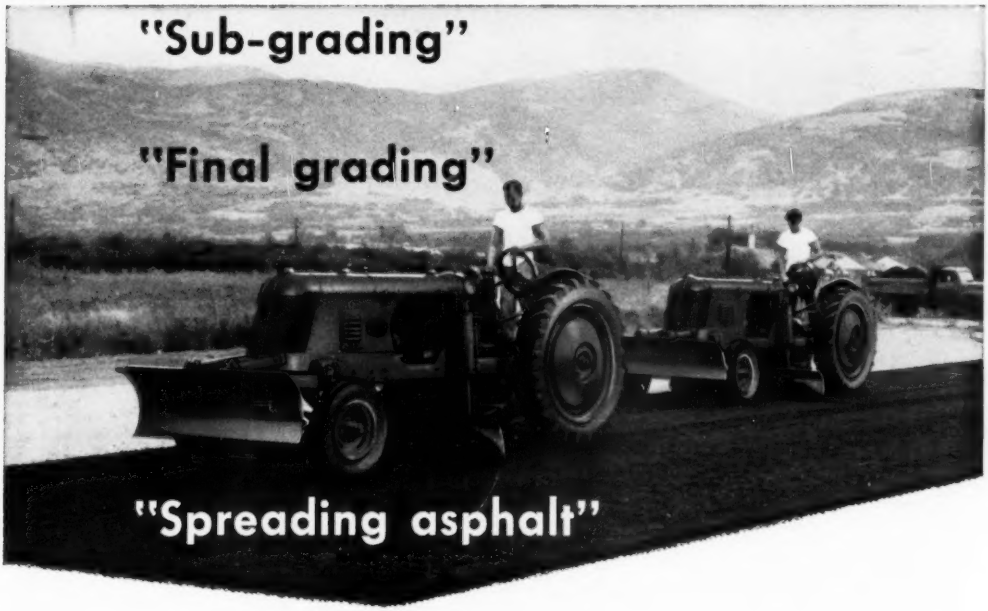
These outlet works are designed to provide a capacity of 3,351 second feet at reservoir water surface elevation (255.9 feet) by passing through two turbines combined with the discharge through two 90-inch by-pass lines.

Two power plants, one on each side of the river, are near the downstream toe of the dam and are identical in size, generating and service equipment, and facilities for servicing. Each will contain three vertical shaft, single-runner, Francis-type turbines each of which will develop 14,750 horsepower at a rate head of 100 feet and a speed of 163.6 rpm, and three 3-phase, 60 cycle, vertical water-wheel generators rated at 10,500 kw, 6,900 volts.

Each power plant will have a centralized control room with separate and independent facilities, and the two plants will be interconnected for transfer of electric energy from one to the other.

Construction on the Falcon Dam began in December 1950. Completion date is set for November 1953.

Above—General view of Mexican power plant section of Falcon Dam.



"HUBER MAINTAINERS ARE THE Handiest Things!"

H. Sessions & Sons of North Salt Lake, Utah, make many uses of a pair of Huber Maintainers in connection with the asphalt laying service they offer in Utah and nearby states. They've been in the business since 1945, a fact that adds significance to the comment of Mr. Sessions that "the Huber Maintainer is the handiest thing there is in a piece of machinery."

The 6,000-pound, 42½ H. P. Maintainers handle sub-grade and final grading work and spread asphalt. The two of them spread 500 tons in eight hours . . . on another job one of them spread 50 tons in 3½ hours. The Maintainers are "just the right size for laying asphalt," Mr. Sessions said.

Mr. Sessions needs only the Maintainer blade and the bulldozer attachment in his work . . . but you can have any or all of the other HYDRAULICALLY CONTROLLED attachments which enable the Maintainer to work as a lift-loader, highway mower, berm leveler, road planer, broom, snow plow or patch roller.

Huber Maintainers are handling scores of jobs for federal, state, county, municipal and township owners as well as contractors and other private users. Why not learn today, from your nearest Huber Distributor or by writing to the factory, what the Huber Maintainer can do to help you?

THE HUBER MANUFACTURING COMPANY — Marion, Ohio

Represented By:

LEARY & OWENS MACHINERY CO., INC.
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SOUTH CAROLINA EQUIPMENT CO.
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Machinery Division
Nashville, Knoxville, Tenn.
CONSTRUCTION EQUIPMENT COMPANY
Mobile, Alabama
LOUISIANA INDUSTRIAL EQUIP. CO.
Baton Rouge, La.
GILL EQUIPMENT COMPANY
Atlanta, Georgia

Lauzet

Maryland's $45,000,000 Chesapeake Bay bridge is shown practically completed on this and the opposite pages. The full-page view to the left is the four and one-third mile structure connecting Sandy Point, on the west shore, with a point near Stevensville, on Kent Island, Queen Annes County, on Maryland's widely renowned eastern shore. There are 123 spans, the principal of which is the suspension span shown immediately above. This is 1,600 feet long, with 660-foot side spans. At the bottom of the page is the second largest span, the 780-foot cantilever over the eastern shore ship channel, with its side spans of 470 feet each.

Maryland's Big Bridge at Finish Point

Culminating the dreams of many years, Maryland's long separated shores are now connected for the first time by a fixed structure—the $45,000,000 bridge between Sandy Point, near Annapolis, and a point near Stevensville, on Kent Island, a part of Queen Annes County on the famed Eastern Shore.

Official opening of the structure is scheduled within the next few weeks, when dignitaries including incumbent Governor Theodore R. McKeldin and former Governor William Preston Lane, in whose administrations the project was started and finished, will gather on the four and one-third-mile overwater route of steel and concrete to mark a milestone in the Free State's history.

Governor McKeldin has appointed former Senator George L. Radcliffe as head of the dedication committee. Present plans are for a double ceremony—on the toll plaza at Sandy Point and the other at the Kent Island end of the project.

July 30 has been set as the date for the event, according to the State's Chief Executive, who has been assured by Roads Commission Chairman Russell H. McCain that the bridge and its approaches will be ready at that time.

While the structure is not the longest in the country, according to Maj. Herschel H. Allen, head of the J. E. Greiner Co., the consulting and designing engineers, its features—length, height, spans and foundations and time required for preliminary development—make it one of the most noteworthy bridge structures built anywhere in the world.

Authorities agree that a record was established in placing the trusses in that twenty-one of the twenty-five trusses were floated into position, making the project the scene of more such procedure than any other up to the present time. E. L. Durkee, erection engineer of the Bethlehem Steel Co., which did the superstructure, pointed out that this method was the only feasible one due to the great water depths.

Salient features of the bridge are the main suspension section over the navigation channel used by ocean-going vessels

(Continued on page 32)

The final span of the $45,000,000, four-mile-long bridge was raised into position on May 23rd. This span was 360 feet long and 40 feet deep. Its weight was slightly over 400 tons. The lift was maneuvered between the two suspension cables. Placing 28 of the structure's larger spans and the 39 suspended floor sections was the largest flotation job in bridge building. The 33,000 tons of steelwork was fabricated and erected by Bethlehem Steel Co.

(Continued from page 31)

from the Virginia capes to Baltimore harbor; a cantilever section over the secondary navigation channel at the east side of the Chesapeake Bay; the magnitude of the suspension cable anchorages, and the economical type of pier design used for the main supports of the cantilever-type main spans.

Of the 123 spans, the principal one is the 1,600-foot suspension span across the main ship channel. This is flanked by two side spans of 660 feet each, making a total length for that part of the structure of 2,920 feet. The cables for the suspension span are made up of fifty-five strands of one and seven-sixteenth-inch and six strands of twenty-nine thirty-seconds in diameter.

Huge and heavy anchorages were built to hold the cables at piers 23 and 28. Frederick Snare Corp. officials, who were in charge of this part of the work, stresses the great steel cofferdams constructed for the two piers, as well as the accuracy in driving the piles prior to dewatering the enclosure. Longest piles were over 100 feet, with the master piles weighing 300 pounds to the inch. Corner beams for the cofferdam weighed thirty tons.

The two high tower piers over which the cable was pulled—not spun as done in most instances—and their two flanking side-tower piers extend more than eighty feet below the water. Built by J. Rich Steers, Inc., they involved the driving of 596 steel H-piles and cost approximately $3,000,000. The main towers are 354 feet high; the side towers, 202 feet. Erection of the towers was started by high-tower crane, then by Chicago booms.

Merritt-Chapman & Scott Corp. constructed thirty-six of the fifty-seven main piers. Among these were the deepest of the span's Potomac type foundations, a design first used by Greiner engineers on the Potomac River bridge at Morgantown. Basic element of this type pier is a bell bottom permanent steel form, usually referred to as a "can" that is lowered atop a timber form supported on the bay bottom by piles.

Baltimore Contractors, Inc., constructed the bents for the eastern part of the bridge, these including bents 30 to 65. Booth & Flinn Co., of Pittsburgh, were contractors for the west abutment and trestle, bents 1 to 29, inclusive. The Baltimore concern, which was the first to finish a pier unit, also did the causeway rehabilitation.

Connecting the suspension bridge and the cantilever bridge are spans ranging from 60 to 600 feet in length. These lengths vary due to the different water and foundation depths along the line of the site, the arrangement being to effect a minimum cost, according to Major Allen.

Starting into the bay at the west end are thirty 60-foot beam spans, a distance of 1,840 feet. These spans are supported on pile bents, every sixth of which is a longitudinal anchorage bent. The intermediate bents are of ordinary design supported on one line of six piles each.

Next are seven 100-foot deck girder spans, supported on cofferdam piers, a distance of 711 feet; then for a distance of 606 feet, three 200-foot deck girder spans, similarly supported; then 1,017 feet, four 250-foot deck truss spans, on Potomac type piers; a distance of 1,832 feet, six 300-foot deck truss spans, and three deck cantilever units, with spans of 450, 480 and 510 feet to the west suspension bridge anchorage.

At this point is located the 2,920-foot suspension bridge, with its 1,600-foot main channel span and two side spans of 660 feet. Between this and the eastern channel crossing are nine cantilever units with spans varying from 450 to 600 feet in length, a total distance of 4,685 feet. The 1,720-foot cantilever bridge consists of a 780-foot main span and two 470-foot side spans.

Eastward to the shore, the spans are similar to the west approach spans. The distance is 4,500 feet and embraces four 200-foot deck girder spans; fourteen 100-foot deck girder spans, and thirty-seven 60-foot beam spans, these completing the 21,286 feet between the west and east abutments of the new bridge across the bay.

Other contractors on the project were C. J. Langenfelder & Son, Inc., east approach causeway and roadway and paving; Nello L. Teer Co., west approach roadway. Construction Aggregates Corp. is contractor for the sand islands; John D. Sheetz Construction Co., for the Cox Creek bridge; F. P. Asher, Jr., for west approach paving.

Rip-rap protection for the west abutment and bents 13 to 29, inclusive, and construction of the boat wharf is being done by the Sheetz concern. Blumenthal-Kahn Electric Co., Inc., is installing the navigation aeronautical and approach lighting. Toll collection equipment is from Taller & Cooper, Inc. Millison Construction Co., Inc., is contractor for the administration building, toll collection facilities and landscaping.

TEAMED UP FOR TOP PERFORMANCE

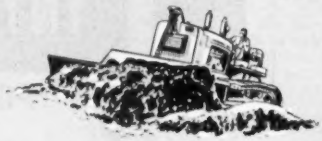
TD-24 Tractors and matched BUCYRUS ERIE Equipment

BUCYRUS-ERIE equipment for the International TD-24 was engineered expressly for use with this modern tractor. Each unit has the size, weight, capacity and balance to work effectively with the TD-24 — to apply fully its exceptional power.

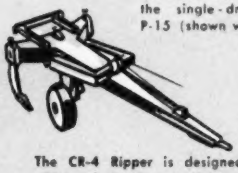
Let your International Industrial Tractor Distributor give you complete information on the wide range of Bucyrus-Erie equipment available for the TD-24.

BUCYRUS-ERIE CO., South Milwaukee, Wisconsin

10T52



Two Power Control Winches: The double-drum rear-mounted P-29 (seen in the scraper view) and the single-drum front-mounted P-15 (shown with the Bullgrader).



Choice of Three TD-24 Blades: The Bullgrader (shown) features three blade positions plus vertical tilt. The Bulldozer has straight across blade position. The Tilting Bulldozer has straight across blade with vertical tilt.

The CR-4 Ripper is designed to withstand the power of two TD-24's — one pulling and one pushing.

Four Pusher Plates: One mounts directly on Tractor frame (shown here). Others mount on Bullgrader frame, Bullgrader blade or Bulldozer blade.

The BIG RED TEAM

Two Big-Capacity Scrapers work with the TD-24: The B-170A with 16-yd. struck capacity is the biggest of scrapers for loading without pusher help. The 22-yd. (struck) B-250 is the largest scraper in current production.

See Your

International Industrial Tractor Distributor

Atlanta airport expansion job is scene of new triumph for International power

When C. A. A. district headquarters decided to move to Atlanta, Georgia, the east-west runway at nearby Fulton County Airport had to be extended to 5,000-foot length.

One contractor, C. L. Rhodes of Decatur, Georgia, is doing the entire job, including cutting through a 39-foot hill and moving 350,000 cubic yards of sandy clay.

Rhodes' General Superintendent, R. N. Smith, tells how the work is going:

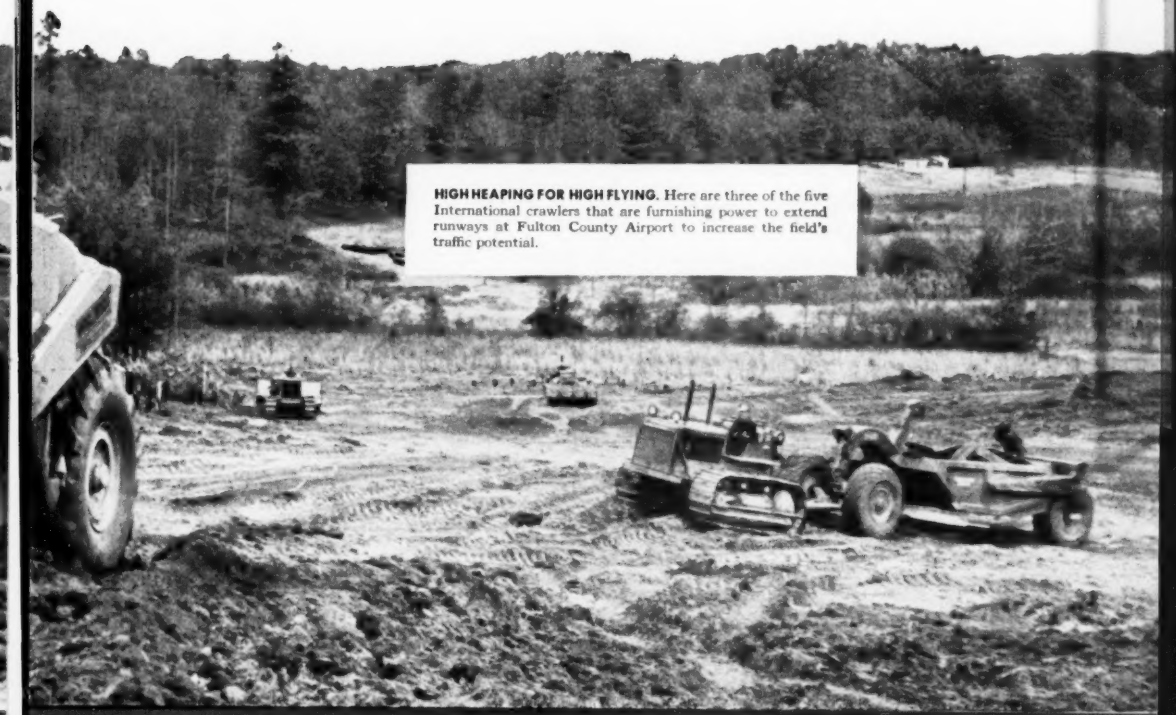
"We load quicker, haul faster and move more dirt with our Internationals than with any other crawlers.

"Our operators push 'em to the limit all day long to get the job done ahead of schedule. The tractors get clean filters, fuel and grease, and hard work—more hard work than is reasonable—and they take it month after month without a let down!"

That's what International owners everywhere are finding out. Find out for yourself. Ask your International Industrial Distributor for details.

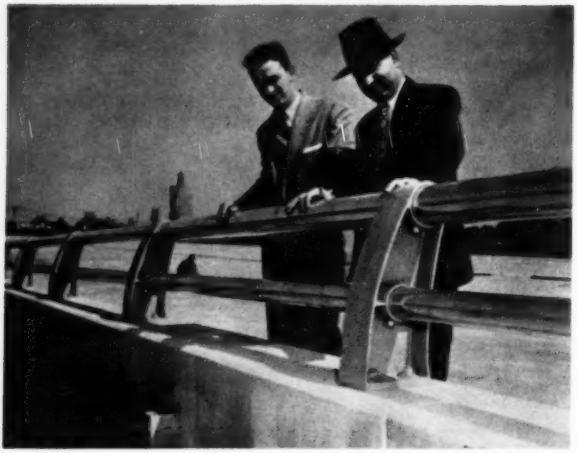
INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS

JOHNNY-ON-THE-SPOT SERVICE. A fast field service team from International's Atlanta distributor rolls up to the job site. Service like this from *your* International distributor is as near as your nearest telephone, to cut down downtime and keep your equipment rolling!



HIGH HEAPING FOR HIGH FLYING. Here are three of the five International crawlers that are furnishing power to extend runways at Fulton County Airport to increase the field's traffic potential.

More Aluminum Use Predicted in Construction



Above—Seventy-two hundred lineal feet of all-aluminum guardrail went into the Kansas City Southwest Trafficway. Diameter of the top pipe was four and one-half inches; of the lower rail, three and one-half inches. The posts are cast aluminum. The installation is described as the first and largest of its kind in the country.

Reynolds Metals Co. anticipates that within five years, at least 3,000,000,000 pounds of aluminum will be going into construction yearly. Even under the severely restricted conditions existing during the last year, more than a half billion pounds of aluminum went into this field. Present market information indicates that sales could easily reach a billion pounds in two years.

Already construction is the largest single customer of the aluminum industry, consuming approximately one-third of the total aluminum output, say officials of that company.

It is not hard to put your finger on the reasons for the great upsurge in this use of aluminum. The lumber supply is getting shorter . . . Aluminum has good corrosion resistance . . . Prices of other materials are climbing to new highs and aluminum's price is described as low and steady.

Many ornamental effects are easily attained through use of extruded sections and special finishes on aluminum. The light metal has good heat reflectivity and it permits important economies in foundation and erection costs, especially with curtain wall construction. Fire underwriters are said to favor aluminum construction over wood.

The various uses for aluminum in building and construction can be broken down into eight general classifications which are discussed below in order of their present importance. Note that this relationship is expected to change. For example it is anticipated that walls, partitions, and ceilings, now in sixth place, might easily turn out to be the first or second in importance in the long run.

Roofing and Siding is estimated to account for 200,000,000 pounds of aluminum yearly. This amount is about 40 per cent of the total quantity of aluminum going into building and construction. Reynolds market people feel that possibilities for increased consumption here are very good and that it might rise as high as twice this amount in the next few years.

Windows and Accessories include many different types of windows as well as window frames, awnings, shutters, and ventilators. About 95,000,000 pounds of aluminum went into this classification of products during 1950, or almost 20 per cent of that used by the industry.

Of all the windows manufactured of various materials, only some 12 per cent are presently made from aluminum, indicating a tremendous potential in this single application. It is estimated that 175,000,000 pounds can reasonably be anticipated for use in these products by 1953.

General Construction Products cover such items as builders hardware, duct work, fire escapes, lighting fixtures and similar uses necessary for the building, yet neither structural nor ornamental. Current rate of consumption for these items is 48,000,000 pounds yearly, about 10 per cent of the total amount of aluminum used by the construction industry.

It is expected that builders hardware alone will expand so fast that 4,000,000 pounds yearly will be reached soon and eventually a rate of 10,000,000 pounds, when current development work by large hardware manufacturers has been completed.

Aluminum fire escapes are a particularly interesting new application in this group. For instance, Reynolds Metals Co. recently supplied more than 250,000 pounds of aluminum for fire escapes for the Baltimore Housing Authority for use in a single building project.

It is expected that with this "foot in the door," many other municipalities will modify their present codes to permit aluminum for fire escapes. By 1953, Reynolds marketers anticipate that more than 107,000,000 pounds of aluminum will be going into general construction products.

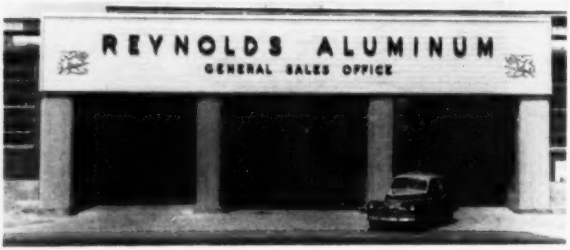
Ornamental Products: The aluminum industry put about 30,000,000 pounds into this field during the past year. We expect that this market should increase to 47,000,000 pounds within the next two years.

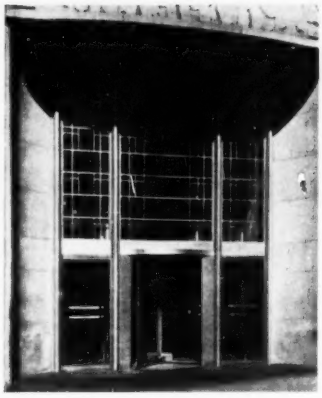
These ornamental products include chalk troughs and blackboard moldings, elevators and moving stairways, grillwork, handrails, marquees, spandrels and ornamental fixtures.

Pre-Fabricated Buildings include storage bins, utility buildings, garages, aircraft hangars, residential housing, and similar structures, fabricated in part or entirety before erection. Total consumption during 1950 for this group was 21,500,000 pounds. The main end-use was grain bins which has shown considerable activity during the past years. The anticipated total usage of 45,000,000 pounds in this case is little more than a careful guess since government programs involving housing could increase or greatly decrease this figure. There are good possibilities here; to date, however, no one has been successful in producing a good aluminum pre-fabricated house. A successful pre-fabricated house could materially change this estimate.

Walls, Partitions, Ceilings: While in sixth place now, this market can well be-

Above—Corrugated aluminum was used to produce this modern effect at the entrance to the Reynolds general sales office, Louisville, Ky.





Above — Ultra-modern design is obtained by using aluminum extrusions as was done at the entrance of the Atlanta Constitution office at Atlanta.

come one of the first three within a few years. Present aluminum consumption is 15,000,000 pounds per year. The estimated potential is 60,000,000 pounds per year, within the next few years.

This large increase is foreseen in the present interest in curtain wall construction. This type of construction, which is somewhat new, involves hanging the exterior walls of a building on the structural framework of the building. Since the wall is supported on the framework rather than being self-supporting, it can be far thinner than for conventional type wall.

Aluminum curtain walls are expected to range in thickness from 6 to 12 inches while conventional walls average around 30 to 40 inches. Through the much lighter building which results, there is a material cost saving in structural steel. One company reportedly saved $300,000 in design and construction of a Pittsburgh skyscraper. A second advantage is that the thinner wall means more usable office space. This could be the greatest single new aluminum outlet.

Doors and Store Fronts: This outlet currently requires 10,000,000 pounds per year. The anticipated potential by 1953 is 25,000,000 pounds because these applications are now well accepted and are rapidly gaining momentum in the construction industry. Modern design demands a "white metal" and aluminum is the best general purpose material when all factors are considered.

Highway Equipment: Included here are bridge railings, bridge floorings, bridge structure and light poles. While recent surveys show no significant usage of aluminum at the present time, it is estimated that around 5,000,000 pounds yearly may be required by 1953. There have been two bridges built of aluminum; a bascule bridge in England, and a standard single-span highway bridge in Arvida, Canada. While there is obvious justification of using aluminum in a bascule or draw bridge, the highway bridge was built more out of academic curiosity than any other reason.

Bridge railings, highway guard rails and light poles represent good, although presently small, aluminum applications.

Concerning new developments, curtain walls mentioned earlier are most interesting, along with similar applications such as the Dome of Discovery, erected in London for the Festival of Britain. About one-half million pounds went into this structure which cost less than a comparable steel structure because of lower assembly costs afforded through the use of a light weight material.

Another project, also in Britain, is the first all-aluminum hangar measuring 125 feet in width, 110 feet in length and 30 feet in height. If constructed in steel, the fairly complex trusses would ordinarily be lifted piece-by-piece into place and assembled in the air. The aluminum trusses were assembled on the ground and easily raised into place. A substantial saving in construction cost resulted although no figures are available giving relative steel-aluminum data.

An example of how aluminum can be used in remodeling work is the general sales office of Reynolds Metal Co. at Louisville.

Several exceptionally novel yet highly effective applications for aluminum have been tried out on a large scale for the first time. Chief of these is the "drop" ceiling suspended several feet below the old ceiling to allow a space for air conditioning ducts, wiring, and the like.

The ceiling itself is made from sheet aluminum which has been embossed with matched roller dies to provide a "stucco" pattern. This flat sheet is then perforated with one-eighth-inch diameter holes in a diamond pattern on five-sixteenth-inch centers and then corrugated with seven-eighth-inch corrugations on a two-and-one-half-inch pitch. Thickness may be as thin as .016 of an inch. The panels are 120 inches long maximum, and 39 inches wide.

The panels are simply positioned on T and channel shaped sections suspended by wires as shown.

Acoustic material is glued to the true ceiling above the suspended ceiling. The perforations allow sound to travel through the suspended aluminum panels and be absorbed by the acoustical material above.

The perforations also afford a means of obtaining uniform distribution of air from duct outlets above the suspended panels down through them to the working areas. The material is so light in weight that no appreciable load is added to the building structure.

In addition, this remodeling job highlights several other potentially important applications for aluminum. All the wiring for the building is placed in aluminum conduit. The ease with which this material can be formed, bent, and applied greatly speeds the installation of wiring.

Also, all the electric conductors in the building are now of aluminum. Where heavy electric wiring is employed, aluminum can provide considerable economies.

Novel new uses for aluminum in building are found in several other parts of this remodeling job. Partitions were installed, using a new extruded aluminum member in place of 2 by 4's and so designed that they can be nailed together. This permits exceptionally fast erections to provide an all-aluminum interior wall or partition.

Florida Road Bids Total $1,491,896 Early in June

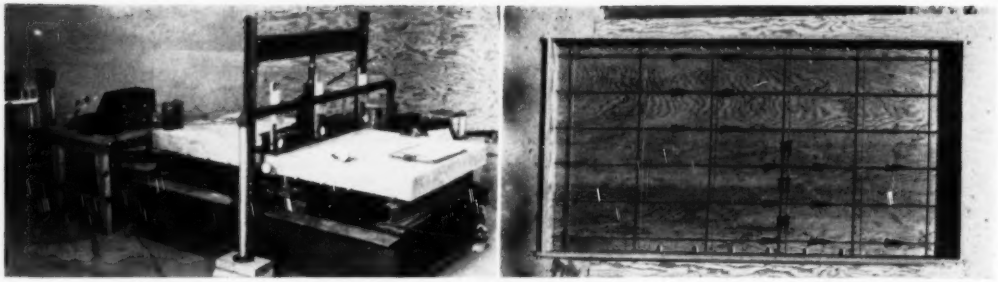
Early June bids opened by the Florida State Road Department resulted in offers to build three projects at a cost of $1,491,896. Listed by counties, the projects included:

Wakulla County — State Project, Job No. 5911-103, Road No. 30, one bridge 322 feet long composed of an electrically operated single leaf bascule span and six 40-foot I-beam spans with concrete deck and steel pile bents, grading, paving and incidental items; Scott Construction Co., Thomasville, Ga., low at $278,171; other bidders, Coggin & Deermont, Chipley, Fla., $298,669; Faulk and Coleman Construction Co., Tallahassee, $307,418; Cleary Brothers Construction, $316,009; Peterson and Earnhart, $316,455; Fairchild-Florida Construction Co., $317,394;

Duval County — Access Road Project No. RD-1, Job No. 7224-301 and State Job 7285-150, State Roads Nos. A-1 and S-101-A, between Road No. 101 and Mayport and from point approximately one mile Northwest of Road No. 101 and Seminole Beach Road; clearing and grubbing, grading, constructing hydraulic embankment, pavement, constructing one bridge, two box culverts; Duval Engineering & Contracting Co., Jacksonville, low at $394,582; Caddell and Jackson, Jacksonville; B. B. McCormick & Sons, Inc., Jacksonville Beach, $439,667; S. M. Wall, $472,605;

Volusia County—State Project, Job No. 7915-102, Road 306, on Granada Avenue between Ormond and Ormond Beach; constructing bridge over Halifax River and approaches; bridge consists of one electrically operated double leaf bascule span; two 60-foot I-beam spans and sixteen 36-foot long concrete deck girder spans on concrete pile bents; Scott Construction Co., Thomasville, Ga., low at $819,142; Cleary Brothers Construction Co., West Palm Beach, $825,392; Tidewater Construction Corp., Savannah, $886,018; R. H. H. Blackwell, $946,731; George E. Dunnell, Inc., $991,652; Industrial Contracting Co. and Associates of Jacksonville, $965,491; Wannamaker and Wells, Inc., $932,234; Cone Brothers Contracting Co., $899,138; Powell Brothers, Inc., $908,585; H. E. Wolfe Construction Co., Inc., $1,009,232.

Alfred A. McKethan is chairman of the Florida commission; Sam P. Turnbull, state highway engineer.



Above—Left—Test slab in testing frame, showing assembly of recording apparatus. Right—Typical SR-4 strain-gage arrangement.

Value and Action of Wire Fabric in Concrete Slabs

by

E. W. Carlton

Professor of Structural Engineering, Department of Civil Engineering, Missouri School of Mines and Metallurgy

The material known commercially as welded wire fabric is produced from cold-drawn steel wire and has been successfully used as a pre-fabricated reinforcement for concrete for over forty years.

Wire used in the fabrication of welded wire fabric is produced from hot rolled rods which are then cold-drawn through dies. The cold drawing process contributes the very desirable qualities of higher tensile strength as well as an increased yield point.

Cold-drawn wire used in this product is manufactured to A.S.T.M. Specification No. A82-34 and has a minimum permitted tensile strength of 70,000 psi. and a guaranteed yield point of at least 56,000 psi. Unlike hot-rolled bars, cold-drawn wire has no definite yield point at or near its true elastic limit. It continues to resist stress without excessive elongation throughout its entire strength range.

Welded wire fabric is used successfully and economically in practically every form of reinforced concrete construction. With increasing attention being given to crack-control in highway and airport pavement designs, welded wire fabric is fast assuming a leading role as an ideal type of distributed reinforcing to accomplishing this end.

Cold-drawn wire, at a stress of 70,000 psi., indicates about one-sixth the elongation when compared with hot-rolled material. Therefore, with the same reinforcing factor of safety, a higher designing stress is permissible with cold-drawn wire than with hot-rolled steel of the same ultimate strength. Cold-drawn wire of 70,000 psi. ultimate will continue to prevent excessive crack opening up to a stress of at least 60,000 psi. Hot rolled steel of 70,000 psi. ultimate strength, when used as concrete reinforcement, would cease to prevent a crack opening at the definite yield point of the material, which is reached when stressed to 40,000 psi.

Comprehensive Research Program

While welded wire reinforcement has been in use for over forty years, little was done toward determining its properties as a structural material during the first half of that period. About twenty years ago the Wire Reinforcement Institute was formed by several of the major steel companies to investigate the problem more thoroughly.

Main objectives set by the W.R.I. are to determine the working stresses that can be safely recommended for welded wire fabric—both in bond and tension, together with the proper spacing and relative gauge combinations of longitudinal and transverse wires. However, not until four years ago, when the Wire Research program at the Missouri School of Mines and Metallurgy was inaugurated, had a major effort been made to determine this information.

Object of the first series of studies was twofold, to determine the effect on bond of varying the length of embedments, and the mechanical anchorage value of transverse wires in welded wire fabric. Results of these bond studies along the longitudinal wires showed unit bond stresses of about 200 psi., which is very low when compared to the ultimate strength of the wire. Tests on mechanical anchorage of the welds were made by embedding a longitudinal and transverse wire in a standard concrete cylinder, the longitudinal wires being greased so that only the anchorage of the weld would be involved. The conclusions from these tests were that the longitudinal wires did not slip until the welds failed in shear. In addition, good welds gave an anchorage value of about 90 per cent of the tensile strength of the wire.

A second series of tests similar to those just described, except that the bond on the longitudinal wires was not released, definitely indicated that the combination of longitudinal wire bond and weld anchorage was considerably greater than the tensile strength of the longitudinal wire.

A third series of investigations was a preliminary attempt to determine the crack-control properties of welded wire fabric. A number of concrete beams were poured, each containing a single longitudinal wire with short transverse wires welded at various spacings. Each beam was divided in the center so that crack openings could be measured at that point. Test beams reinforced with No. 2 longitudinal and No. 4 transverse wires appeared to be the best combination for controlling crack openings. In addition, some tests were made on wire pickled in acid in an attempt to increase the bond on the longitudinal wires between welds, however, the results obtained were about equivalent to two weeks' rust, due to weathering.

Below—Weld-tester.

Development of Weld-Tester

All of the aforementioned investigations indicated a wide variation in strength of welds. Therefore, in order to increase the uniformity of welds and welding technique among the several manufacturers of wire fabric, a special weld-tester was developed in 1950 at the Missouri School of Mines and Metallurgy. The weld-tester is so designed that it practically eliminates the eccentricity of pull and prevents possible rotation of the transverse wire in the wire sample, with the result that the actual shearing value of the weld is obtained when testing a specimen to failure.

Results obtained with the weld-tester gives lower values than tests obtained

by direct pull-outs in concrete. This is due to the fact that in the concrete specimen the surrounding concrete holds the wires in their original position even though the weld has failed in shear. Since the wires are mutually embedded during the welding process it tends to prevent slipping of the cross wire along the longitudinal wire. This added value of mechanical bond due to wire embedment plus the anchorage value of the welded cross wire is greater than the weld strength of the wires alone.

The weld-tester has thoroughly proven itself through a long series of tests and has been adopted by the member companies of the Wire Reinforcement Institute as the official production control test for the setting of the welding heads in making wire fabric. The weld-tester can also be used as a means of establishing an acceptance rating by the large users of welded wire fabric. Work is now under way to ward the preparation of an A.S.T.M. Specification governing the use of the weld-tester as an official production and acceptance control for welded wire fabric.

Since the development of the weld-tester, samples from all fabric used in these research studies have been subjected to direct weld shear tests.

Stress Distribution Study

In order to test welded wire fabric under conditions more nearly approaching those found in reinforced concrete highway slabs, studies were made on nine welded wire fabric reinforced concrete slabs, 4 inches by 36 inches by 66 inches, the slabs being pre-cracked at the centerline. A concentrated load was placed in the exact center and strains in the wire under various loads were measured by means of SR-4 strain gages.

Weld test data and an average stress-strain curve obtained from samples of the nine fabric sheets used in this investigation revealed the following properties:

Yield stress	70,200 psi.
Tensile strength	88,200 psi.
Per cent elongation	13% (2-in. gage length)
Modulus of elasticity	30.6 x 106 psi.
Weld value	(#2 x #2 fabric) 55,450 psi.
Weld value (#2x#4 fabric)	63,200 psi.

Test Procedure

The slab tests were made on a specially constructed testing frame and the load applied with an 8-ton capacity hydraulic jack. In order to prevent the center of the slab from deflecting more than the edges, this load was transmitted to the slab through two 3-inch I-beams resting on 4-inch by 4-inch by ¼-inch angles embedded in the concrete.

The load was measured by means of a loading cell containing strain gages placed between the top of the jack and the 4-inch I-beam cross-bridge of the testing frame.

Each slab was carefully placed in position in the testing frame, the jack centered and all strain gages connected to the strain indicator. Ames dials were placed at three points near the centerline of the slab to detect warping. Crack measurements at the centerline were taken with Ames dials permanently mounted, and any cracks occurring between plugs embedded at the base of the slab were measured with Ames dials.

Two loading runs were made on each slab developing 40,000 psi. in the most highly stressed wires. The load was returned to zero, the zero load readings again noted, and the gages re-zeroed. In no case did any cracks occur under this loading. A final test was then run and carried through to failure. Because the gages were zeroed at the beginning of each test run, the stress due to dead load does not appear in the gage readings. The dead load calculation showed the dead load stress to be 6,850 psi in Test Series 1 and 2.

Interpretation of Data

In the graphs showing the stress in the steel for various loads, the stress obtained by experiment is slightly lower than that obtained by calculation. This is probably due to a slight mechanical bond along the wire preventing the strain at the centerline from completely reaching the gage. Longitudinal gages placed between crosswires 1 and 2, each side of the centerline, show a very slow rise in stress due to the holding action of the welds until cracking occurs at the first transverse wire, causing a very sudden increase. However, soon after this increase, the stress in the second row of longitudinal wire gages is still well below that obtained by using the Concrete Formula. Similarly, no increase in stress in the third row of longitudinal gages was observed until cracking occurred at the second transverse wire. This indicates that although a small amount of stress goes beyond the first transverse weld prior to cracking, practically none travels beyond the second transverse weld.

Very little stress was found to be present in the transverse wires, due to the load being distributed evenly across the centerline of the slabs. In the case of two-way support, however, stresses in transverse direction would be appreciable.

No evidence was found that indicated shearing in any of the welds. Examination of the most highly stressed welds of three slabs following failure, showed them to be still in excellent condition.

An examination of the crack data showed that crack openings between any two transverse wires very closely equals the transverse spacing multiplied by the strain gage reading for the wire. In most cases, all cracks closed upon release of the load within the yield point. It is very likely that a few grains of sand were displaced upon cracking and prevented some cracks from closing completely.

Summary of Results

In concluding the comments in this paper, the author feels that sufficient reliable data on the physical stress-carrying ability of welded-wire fabric has been obtained to warrant his wholehearted endorsement of this product as a most desirable type of reinforcement for concrete pavements.

Since no cracks were evident in any of the test slabs until the stress in the longitudinal wires of the fabric exceeded 40,000 psi., the usually accepted design stress of 30,000 psi. for longitudinal wires may be considered conservative.

The high yield strength of cold-drawn wire, together with the positive anchorage value of the cross-wires make welded-wire fabric a most efficient reinforcement. In a properly designed reinforced concrete slab, welded-wire fabric will reduce the size of any cracks that may develop as well as materially aid in controlling their distribution.

Engineer Dearth Seen

A critical shortage of 18,000 engineers is restricting production, distribution, research and development in 450 major industrial companies. This was disclosed by L. L. Dresser, president of the National Society of Professional Engineers, in his report on the Society's nationwide survey of engineering manpower utilization.

"Industry urgently needs engineers to keep America's industrial machine operating at peak efficiency," Mr. Dresser said. "Since the necessary engineers are not available, the only answer is better utilization of existing engineering manpower."

The NSPE survey, conducted among companies which employ 99,000 engineers of a total of 2,500,000 persons, showed that they need 10,000 engineers by September 1. It also revealed that many firms realize that more effective utilization of engineering personnel is the only immediate method of easing the shortage.

Results of the survey, which will be published in report form this fall, indicate many techniques which leading industries have used successfully to overcome the lack of trained engineers. These proved methods, coupled with actual case histories, will make the report a practical working guide of use to all industry.

The survey was conducted by the Professional Engineers Conference Board for Industry, formed by the National Society of Professional Engineers for the study of vital engineering-management problems. It is the second survey in this series of studies. Subject of the first survey was "How to Improve Engineering-Management Communications." This study focused attention upon the need for better communications between managements and engineers and suggested methods for improving them. It was published in report form and distributed to 7500 executives in industry, engineering, science and education. Distribution was also made to the Society's members and other opinion leaders.

Dr. David B. Steinman of New York City, builder of bridges on five continents, widely publicized as "The Poet Who Writes in Steel," has received the second award ever given by the National Society of Professional Engineers for distinguished services to the engineering profession. The presentation was made on May 7, at the Society's eighteenth annual meeting in Tulsa, Okla.

Stabilization

Above—Left—Calcium chloride is added after placing a minimum of one-half to a maximum of one mile of aggregate; Right Rollers obtain great density in final road base that has been treated with calcium chloride.

by
T. D. Williams
Field Engineer,
Calcium Chloride Institute

Stabilization is far from a new term. In fact, one of the most lasting roads ever constructed was hand-stabilized many centuries ago by the Romans and called the Appian Way. However, until recently stabilization was almost a foreign word in local and county road construction. But with the advance of the automobile, the demands of the public for a road past their homes which would be capable of withstanding loads of present day traffic, serviceable in all types of weather and still dust-free, has forced engineers to become more and more stabilization-minded during the past few years.

Ask almost any resident "What road is most important to you?" and invariably the answer will be "The one in front of my home." The significance of this answer is fully realized when considering the great stress placed on county and local road planning and construction within the past few years.

Stabilization of county roads is one of the most controversial to be found in modern day highway construction. It is controversial in that, with the many different kinds of stabilization, engineers often do not see eye-to-eye on the type of construction and treatment necessary to provide a solution to public demands and still fit economically into their budgets.

Stabilization can perhaps be generally defined as the consolidation of granular materials (with or without an admixture of chemicals, neutralizers or water-insoluble binders) to provide a well-compacted thickness that will to some degree control water movement and will provide a stable road in all types of weather. The stabilized material may serve either as a wearing surface or a base for a higher type pavement.

Many types of stabilization have been accepted as adequate in the various sections of the country. Probably the most used types are:

1. Granular stabilization.
   a. Well-graded aggregates with or without the use of calcium chloride.
   b. Water-bound macadam, by use of large sized stone choked with stone screenings and dust.
   c. Sand-clay.
2. Soil-Cement.
3. Asphalt or tar penetration and stabilization.
4. Lime stabilization.

Although sufficient funds are often available to permit the use of imported aggregates in the construction of our primary roads, this is seldom permissible in local road fields. The stress placed on low cost road construction in the secondary and rural road fields necessitates the full use of local materials. Thus, engineers find it not only profitable but practical to use whatever local material is available in the stabilization work they undertake.

For this reason, any one of the foregoing types of stabilization may be used economically in some areas. However, due to the ease of construction and, more often, economical features, the first type —granular stabilization — is generally used.

This is understandable in that it is well adapted to stage construction, in addition to being a type easily completed with the same types of equipment used in the general maintenance of local roads. Many engineers prefer the use of well-graded aggregates over water-bound macadam because of the east of obtaining a more uniform and better riding surface. Calcium chloride can normally be economically used because of conservation of materials and reduced blading costs.

Below—Shaping the road to proper width.

Soil-cement has particularly adapted itself to those localities completely void of limestone and gravel. There, by the addition of cement to the depth required to provide an adequate base for the traffic anticipated, stabilized bases may be obtained that will more economically support a pavement than any of the other types mentioned.

Bituminous or tar penetration and stabilization have been used on many local roads, city streets, and particularly on the primary system constructed by the State Highway Departments. It has particularly adapted itself to use in the coastal plain areas where sand is plentiful and binder soil often non-existent.

Lime stabilization, although used many centuries ago, is a fairly new field in modern day construction due to lack of this type work over the past few decades. One of the main features of lime stabilization is its ability to reduce the plastic index of highly plastic soils. The State of Texas has taken the lead in this experimental work and it is my understanding that they have obtained excellent results in many cases.

Stage construction is often believed to be one of the most desirable features of stabilization work today in the local roads field. Counties and other local political subdivisions normally find that they do not have sufficient funds to go into permanent type construction to the degree necessary to satisfy the public.

However, by constructing bases in stages, even though the final pavement may not be placed for several years, more motorists can be served during the interim period. Too, the majority of local highway departments find it difficult to visualize the day when all their roads will be in such condition that the officials can sit back and relax without a thought of complaints reaching their offices. Thus, in many cases, they must go into stage construction to adequately serve and satisfy their constituents.

Another main concern of local road engineers has been to establish a sound criterion for determining at what point a higher type surface should be applied. The common theory is traffic count; however, here again is a subject that is a basis for good discussion. We have heard ideas that have ranged from 100 vehicles per day to as high as 500 vehicles per day. And in most cases the engineer is entirely justified in his reasoning, as availability of materials and funds furnished him are definite controlling factors.

In areas where local surfacing materials are becoming scarce, it is easy to visualize a condition where engineers

(Continued on page 48)

Equipment . . . Manufacturers News

Rotary Compressor Speeds "Gunite" Work

The speed with which "Gunite" walls and other "Gunite" work can be accomplished has been increased approximately 25 per cent through use of a newly developed 600 c.f.m. rotary type air compressor in place of a 500 c.f.m. conventional type air compressor formerly used when two "Cement Guns" were required on a project.

One of these units was installed by Hanna, Zabriskie & Daron, Detroit "Gunite" contractors, in August 1951, and since that time company records have consistently reflected this substantial production increase.

These compressors, although smaller than other big capacity portables, deliver an adequate air supply for keeping two "Cement Guns" used in the "Gunite" process operating at top efficiency.

Harvey Hanna, president of the company, explained that the compressed air motor which drives the mechanism of each "Cement Gun" requires approximately 60 cubic feet of air per minute. Capacity of the rotary type compressor is 600 c.f.m., so after the demand for two "Cement Gun" air motors is met there remains 240 c.f.m. for conveying the dry cement-sand mixture from each of two "Cement Guns" through the material hose to the point of application.

Progress on a recent job which involved over 67,000 square feet of 2" wall on a high industrial building was consistently maintained at the rate of 100 square feet per gun per hour.

The rotary compressor used is the "Gyro-Flow 600" developed and manufactured by Ingersoll-Rand. It is powered by a six-cylinder GM Diesel engine. The engine is direct connected to the compressor mechanism and turns at 1800 RPM. The availability of smaller high-speed two-cycle Diesels was an important factor in the development of this new compressor. Its use helped the designers produce a compressor of higher capacity and also reduce its size and weight in comparison to portable units of equal output.

Hanna, Zabriskie & Daron since 1922 have specialized in pneumatically applied concrete, which is, of course, commonly known as "Gunite." The company owns and operates 13 "Cement Guns."

New Spreader Announced

Production of the new Model 100 Jersey Spreader—a tractor mounted stone spreader with capacity to handle up to 20 tons per minute, has been announced by the Tractor Spreader Co. of Hasbrouck Heights, N. J. The new spreader features strike-off adjustment that permits varying depths of spread from a minimum of one inch up to 12 inches. Adjustable bleeder gates allow a variable width of spread from 10 ft. to 13 ft. in 3 inch increments.

Model 100 is designed for use with the heavier crawler-type tractors and is mounted on the push beams of the dozer after the blade has been removed. Adaptation can be made without special attachments to most tractor-dozer combinations. It can be used with either cable controlled or hydraulic dozers by simply pulling the pins and mounting in position on the push beams.

J. D. Adams Announces Changes in TraveLoader

J. D. Adams Manufacturing Co., Indianapolis, Ind., announces an improved design change in its self-propelled, belt-type loader. The machine, known as Adams TraveLoader, has been redesigned to load material from stock piles as well as windows. Spiral blades on the full-floating feeder work the material in to 14 curved blades which place the material on the revolving conveyor belt. The feeder is hinged at the rear and is free to float so as to readily adapt itself to size of windrow or stock pile.

The TraveLoader is powered by an International industrial-type gasoline engine which furnishes power for operating the feeder and conveyor as well as propelling the machine. An auxiliary transmission is used which permits operating travel speeds as low as 0.23 m.p.h. and a top travel speed of 25.5 m.p.h.

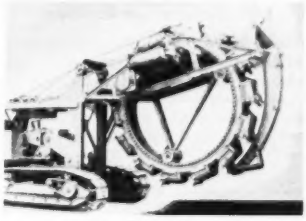
Fenders, both front and rear, and complete cab enclosure may be had as optional equipment. The operator's cab is centrally located for complete visibility in all directions.

Wheel Trenchliner Described In New Catalog

Parsons Company has issued a colorful 4-page catalog describing outstanding features of the new Parsons Model 202 Trenchliner. This is a wheel-type digging unit, designed primarily for drainage and utility trenching work, with a maximum digging capacity of 18½ feet per minute, according to the manufacturer. Parsons Company is the Newton, Iowa subsidiary of the Koehring Co.

Full crawler mounted, the Parsons 202 Trenchliner is equipped with either square or round bottom buckets that cut trenches 13 to 31 inches wide, to a maximum depth of 6 feet. Its range of 30 digging feeds extends from 6.2 inches to 18½ feet per minute. Bucket fronts can be changed quickly from cutting lips to Parsons "Tap-In" teeth to meet any soil condition.

Outstanding features incorporated in the new 202 Trenchliner for high speed production on drainage, irrigation, municipal and utility trenching projects include: enclosed friction clutches for accurate control of wheel depth to grade;



202 Trenchliner

all-welded unit frame and truck rollers mounted on antifriction bearings; the shiftable and reversible belt conveyor that discharges spoil to either side of the machine; enclosed main gears running in constant oil bath to assure dependable performance. A choice of either 52-horsepower gasoline of 55-horsepower diesel engines is offered with the Model 202.

Equipment . . . Manufacturers News

Twenty-two-yard Scraper Announced by Wooldridge

A new 22-yard tractor-drawn scraper, the TC-190, has been announced by Wooldridge Manufacturing Co. of Sunnyvale, Calif. and Chicago, Ill. Said to be designed for use with today's largest tractors, the new model offers capacities of 19 cubic yards struck and 22 heaped. Standard equipment calls for 21:00 x 24 tires front, 24:00 x 25 rear.

Standard new type side cutters of manganese alloy steel are bolted on to

Wooldridge Scraper

protect bowl side sheets. For rocky terrain and extremely tough material, optional oversized side cutters of extra thickness and strength are available.

The manufacturer reports that the TC-190 was engineered to meet specific requests by contractors for a larger scraper with basic characteristics of current models TC-142 and TC-170. Rapid loading is claimed to result from latest application of the "boiling bowl" principle.

Positive fast dumping with less tractive effort is said to be achieved by a rolling motion applied by the Wooldridge ejector, pivoted at the blade base. Among other claimed features are simple cable reeving and long cable life, maneuverability aided by low gravity center with high ground and yoke clearance, and extreme ruggedness.

Torque Converters Available for Caterpillar Engines

Caterpillar announces that factory-installed torque converters can be provided for six sizes of its industrial engines. Diesels with converters are being used to power excavators, cranes, railroad switchers, oil drilling rigs, logging yarders and other equipment.

On heavy and varying loads, these torque converters allow the engines to maintain a continuously high output. Turning effort is multiplied considerably at low output speeds. When loads are lifted or lowered, as in crane operation, the converter facilitates the "pick up" of a standing load or the braking of a load being lowered.

Caterpillar diesel engines available with torque converters range from 70 to 500 brake horsepower and include the D397, D386, D375, D337, D318 and D315.

With the smaller, in-line engines—D337, D318 and D315—power can be delivered to the converters with or without a clutch, or with a clutch and reversing gear. Output arrangements include either a stub shaft or chain housing, the latter available in two sizes.

Converters for the three larger, V-type engines—D397, D386 and D375— may also be installed with or without a clutch. They may either be direct-coupled to the engine or chain driven. A stub shaft is provided on the output end of the converter.

The torque converters mentioned above are Twin Disc models that use ordinary Diesel fuel as hydraulic fluid, making it possible to attach a charging device that draws from the engine fuel supply. An independent cooling system is also offered.

Additional information may be secured from the local Caterpillar Dealer or from Caterpillar Tractor Co., Peoria 8, Ill.

New Scaffold End

A new demountable scaffold end frame—155-X—that may be disassembled and passed through small openings for scaffold erection in water tanks, oil tanks, blast furnaces, boilers and similar jobs where entrance space is limited has been developed by Wilson-Albrecht Co., Inc., manufacturers of Waco Steel Scaffolding equipment.

Measuring 5 feet 6 inches high and 5 feet wide, the new end frame demounts quickly into four sections—two upright and two cross members. The largest of these are 5 feet 4½ inches long and 18 inches wide, permitting entrance through a very small aperture. Assembled, the members are held rigidly in place by coupling pins and toggle pins.

Rubber Hose Made To Transfer Concrete

United States Rubber Co. announces development of a new rubber hose for the construction industry which can be used to transfer concrete from batch mixer to trucks at a considerable saving in time and cost.

The first cost is higher than the canvas spout usually used by ready-mix concrete companies, but the hose is described as more economical in the long run because it lasts at least six months whereas canvas is usually good for an average of one week. Users say the hose remains flexible throughout its life. It is also easier to clean and is free of clogging.

Heavy Equipment Brochure Published by Hyster

For the first time in the heavy machinery field a comprehensive guide illustrating the use of tractor-mounted tools in all basic industries such as railroading, construction, light and heavy logging, farming, mining, oil and gas and governmental projects, has been released.

Entitled, "A Story of Tractor Tools and Their Uses," it is published by Hyster Co. of Portland, Ore. and Peoria, Ill., manufacturers of a line of 33 tractor tools and attachments and earthmoving equipment.

Printed in four colors, the brochure uses an unique cartoon-style which effectively presents for the first time in one package, many of the principal uses for this type of equipment. Copies are now available from any "Caterpillar" distributor, or from Hyster Company.

New Floor Surfacing

A new floor resurfacing and patching material which provides an extra hard surface to facilitate hand trucking is announced by the Monroe Co., Inc., 10703 Quebec Avenue, Cleveland 6, Ohio.

Named Steelhard, the compound is made of resins and non-stone aggregates. According to the company, these form a hard, tough, resilient surface that permits the heaviest of loads to roll easily and smoothly.

New Flex-Plane Finisher Speeds Concrete Paving

A portable finishing machine is now being made by the Flexible Road Joint Machine Co., Warren, O.

The Detroit Special, as it is called by the manufacturers, is described as extremely portable. It will lift itself off the paving forms onto its own built-in, pneumatic-tired "trailer." A hydraulic tongue lifter spots the tongue for fast attachment to batch truck or other towing equipment.

Two automobile-type pneumatic tired wheels nest in the frame of the finishing machine as it is working on the forms. When it comes time to move the machine to another job, a flick of a switch lowers the wheels and the whole machine be-

The Detroit Special

comes a trailer. Contractors who have used the machine claim large labor savings, as idle time while transporting machinery is cut to a minimum.

The Detroit Special incorporates other features. It is designed to telescope to conform to any width work. Machines are made in three basic sizes to finish widths from 10 to 27 feet.

The screeds are both mounted on the outside of the frame. This enables the machine to set lower on the forms, providing greater rigidity and greater accessibility. An offset screed attachment is provided for contractors who contract for integral curb work. The attachment rough forms the curbing.

Stewart Armington Elected Euclid Board Chairman

Directors of the Euclid Road Machinery Co. have elected Stewart F. Armington chairman, succeeding his father, G. A. Armington, who was elected honorary chairman after serving as board chairman ever since the company was formally incorporated in 1931.

S. F. Armington

Stewart Armington, one of the founders of the company, steps up to the chairmanship from vice president. G. E. Armington succeeds Stewart Armington as vice president, engineering, and Hugh T. Monson was elected vice president, manufacturing.

Mr. Monson, with Euclid since 1936, has been factory manager. He served as first managing director of Euclid (Great Britain), a company subsidiary in Scotland which was established in 1950.

E. H. Newby was elected vice president, controller. He has been with Euclid 16 years and has served as advertising manager and personnel director.

Other officers re-elected are R. Q. Armington, president, E. F. Armington, vice president, sales and secretary, and J. L. Hinckley, treasurer.

Shareholders of the company re-elected present directors of the company for the coming year at their annual meeting prior to the directors meeting. Those re-elected were: R. Q. Armington, S. F. Armington, G. A. Armington, G. E. Armington, E. F. Armington, Peter Reed and Clarence Taylor.

Maintenance Goes Over With a "Boom"

Maintenance goes over with a "boom" at the new plant of Caterpillar Tractor Co. in Joliet, Illinois. A 6,000-pound capacity Yale electric crane truck equipped with a new type articulated platform is used for faster, easier maintenance of lighting and other overhead equipment. The crane can position the boom and platform for overhead work above machine tools and other obstacles—in locations difficult to reach by other means.

In operation, maintenance man and material are picked up by lowering the boom until the platform rests on the floor. Positive mechanical linkage on the boom keeps the platform parallel with the floor at all times, regardless of boom elevation. For maximum coverage from a given aisle location, the boom can be extended to lengths up to 19 feet and swung in a 270° arc.

This same crane truck also is used for outdoor maintenance work. Here, it can reach from the street over grass and sidewalks to service the company's street lighting equipment.

The crane truck and platform were designed and manufactured by The Yale & Towne Manufacturing Company, Philadelphia 15, Pa.

Kentucky Road Bids Total $2,927,774.03 in June

Kentucky late last month received bids totaling $2,927,774.03 on twenty-nine projects. Listed by counties, they are:

Ballard-McCracken Counties — AS 63 (4); SP 4-201; 73-292; 73-252; 4-181; SP 4-241; SP 4-201 The Woodside West Paducah Rd., 9.575 mi., bituminous surface class I bank gravel base, R. B. Taylor Co., Louisville, Ky., $205,228.60.

Christian County—U 150(6); SP 24-85, 9th Street (U.S. 41E) in Hopkinsville .490 mi., bituminous concrete base, binder and surface class I, Ralph Rogers & Co., Inc., Nashville, Tenn., $162,201.55.

Fayette County—U 538(5); U 2(6); SP (34-304) The Lexington Circle, 6.375 mi., bituminous concrete surface class I, The Allen Co., Inc., Winchester, Ky., $474,-164.65.

Hickman-Carlisle Counties—S 393(3); SP (53-49) (20-44) The Fulton-Metropolis Rd., 6.135 mi., McDade & McDade, Fulton, Ky., $66,891.18; bituminous surface class F, R. B. Tyler Co., Louisville, Ky., $66,593.20.

Lawrence County—F 537(1); SP 64-113, The Louisa-Catlettsburg Rd., Repair to existing bridge, construction of 2-50 (RCDG SPANS), alt. A Harry O. Wyse, Lexington, Ky., $113,062.30; alt. B Harry O. Wyse, Lexington, Ky., $113,860.90.

Owen County—S 197(2); SP 94-333 The Fairbanks-Natlee Rd., 5.994 mi., grade, drain and traffic bound limestone, Lovell & Hart Construction Co., Lexington, Ky., $87,694.48.

Allen County—SP 2-75, 5.67 mi., bituminous surface class I, L. P. Cavett Co., Lockland, Ohio, $42,216.67.

Bullitt County—SP 15-94, 3.3 mi., bituminous surface class C-1, Eaton Oil Works, Inc., Covington, Ky., $18,568.36. Bituminous surface class F, Walters Construction Co., Elizabethtown, Ky., $22,892.00.

Campbell County—SP 19-111, The Alexandria-Falmouth Rd., .267 mi., grade, drain and cement concrete pavement (crushed gravel aggregate) The Harper Construction Co., Covington, Ky., $68,-250.80. Grade, drain and bituminous macadam surface (limestone aggregate) R. C. Durr, Walton, Ky., $43,625.10.

Graves County—SP 42-408; SP 42-428, 8.5 mi. bituminous surface class 1, Sou. Quarries & Const., Div. of N. Y. Coal Sales Co., Chillicothe, Ohio, $93,842.35.

Green County—SP (44-136) (44-356) 5.6 mi., bituminous surface class F, L. P. Cavett Co., Lockland, Ohio, $72,411.25.

McCracken County—SP 73-772; SP 73-492, 6.15 mi., bituminous surface class 1, R. B. Tyler Co., Louisville, Ky., $66,-655.60.

McCracken County—SP (73-192) (73-112) (73-342) (73-362) (73-382) 2.100 mi., 8 inch cement concrete pavement and bituminous surface class 1 (limestone aggregate) R. B. Tyler Co., Louisville, Ky., $36,776.45.

McCracken County — SP 73-412, 8.029 mi., bituminous surface class C1, R. B. Tyler Co., Louisville, Ky., $67,588.96.

Madison County—SP 76-311, 9.2 mi., bituminous surface class C-1, Carey Construction Co., Lexington, Ky., $59,062.93.

Morgan County — SP 88-38, 8.066 mi., bituminous surface class C-1, Kentucky Road Oiling Co., Frankfort, Ky., $79,-837.83.

Pulaski County—SP 100-75, 4.7 mi., 3-inch bituminous macadam surface, L. P. Cavett Co., Lockland, Ohio, $46,114.84.

Pulaski County—SP 100-455, 6.53 mi., bituminous surface class C-1, Carey Construction Co., Lexington, Ky., $42,387.37.

Mercer and Woodford Counties — SP Group 40 (1952) 8.70 mi., bituminous surface class 1 and rock asphalt surface, Hinkle Contracting Co., Paris, Ky., $69,-816.24.

Pike County—SP Group 41 (1952) 2.556 mi., bituminous surface class 1 (limestone aggregate) Adams Construction Corp., Paintsville, Ky., $18,736.00.

Ballard County — RS (4-361) (4-381) 3.222 mi., RS 4-361 The Lovelaceville-Kevil Rd., reconstruction and local bank or creek gravel, Blackburn and Ferguson Contracting Co., Fredonia, Ky., $38,-262.05. RS 4-381 The Tabor Rd., 5.482 mi., reconstruction and local bank or creek gravel, Ford-Guhy Construction Co., Bardwell, Ky., $127,161.60. Combination RS 4-361 and RS 4-381, 8.407 mi., reconstruction and local bank or creek gravel, Ballard and Hamilton, Bardstown, Ky., $141,165.56.

Edmonson County — RS 31-478, The Basham Rd., 3.494 mi., reconstruction and traffic bound limestone, Tanner Bros., Jeffersonville, Ind., $37,065.90.

Green-Metcalfe Counties—RS (44-416) (85-324) The Crail Hope-Node-Seven Springs Church Rd., 3.429 mi., reconstruction and traffic bound limestone, R. B. Tyler Co., Louisville, Ky., $30,190.53.

Hart County—RS 50-460 The Bonnieville-Hardin County Line Rd., 4.523 mi., reconstruction and traffic bound limestone (14" RC piling) Derby Road Building Co., Inc., Louisville, Ky., $69,557.50. Reconstruction and traffic bound limestone (12" structural steel piling) Ballard & Hamilton, Bardstown, Ky., $67,-125.50.

Henderson County — RS 51-599, The Washington Street Extension, .293 mi., reconstruction and traffic bound river gravel, S. J. Boone, Owensboro, Ky., $41,-633.32.

Hickman County—RS 53-469, The Zion Church Rd., 2.455 mi., reconstruction and traffic bound river gravel, McDade & McDade, Fulton, Ky., $41,825.64. Reconstruction and local bank or creek gravel, Ballard & Hamilton, Bardstown, Ky., $44,544.29.

Powell County—RS 99-260, The Bowen-Spaas Creek Rd., 2.386 mi., reconstruction and traffic bound limestone, Harris & Rose, Mt. Sterling, Ky., $33,816.53. Reconstruction and local bank or creek gravel, L. M. Hart Const. Co., Inc., Lexington, Ky., $36,104.55.

Spencer County—RS 108-327, The Hickory Ridge Rd., 8.229 mi., reconstruction and traffic bound limestone, Sam Nally Co., Bardstown, Ky., $67,342.25.

Wayne County—RS 116-379, The Boys Camp Rd., 1.592 mi., reconstruction and traffic bound limestone, R. R. Dawson Bridge Co., Bloomfield, Ky., $13,529.20.

Oklahoma Hwy. Awards Total $2,782,655 in June

Contract awards made by the Oklahoma State Highway Commission in June amounted to $2,782,655. This figure was $21,012 under estimated costs.

Contracts were let for 76.429 miles of construction and 15 drainage structures and bridges.

Low bids ran under estimates more than did low bids on grading and drainage and paving.

Bids on a 10-mile grading and drainage and paving job on SH 74 in Logan county were not opened because local interests had failed to guarantee free right-of-way requirements. The job was estimated to involve $610,591.

Awards and disapprovals were as follows:

Johnson County—RC-108(1), U.S. 70, repairs on Turkey creek bridge one and one-half miles southeast of Mannsville, low bidder, Lee Harris, Cushing, $7,921;

Logan-Payne Counties—F-176(3) Pt. 1 Gr., S.H. 51, from U.S. 77 east, 7.220 miles 34-foot roadbed and extension to reinforced concrete culvert, $110,882; low bidder, Peter Kiewit Sons Co., Oklahoma City, $117,441; disapproved;

Payne County—F-176(3) Pt. 2 Gr., S.H. 51, from 7.220 miles east of U.S. 77, east, 1.900 miles similar construction; low bidder, Peter Kiewit Sons Co., $39,717.75; disapproved;

Logan-Payne Counties—F-176(3) Pt. 1 Surf., S.H. 51, from U.S. 77 east, 2 miles 8-inch soil sub-base, 7-inch rock base course, 24-foot asphaltic concrete paving, 5-foot single bituminous shoulders; low bidder, Peter Kiewit Sons Co., $430,801.43; disapproved;

Payne County—F-176(3) Pt. 2 Surf., S.H. 51, from 7.220 miles east of U.S. 77 east, 1.900 miles similar construction; low bidder, Peter Kiewit Sons Co., $112,434; disapproved;

Kingfisher-Logan Counties—SAP-1058 (2), S.H. 51 from 8.126 miles east of U.S. 81, east, 5.556 miles 8-inch soil sub-base, 8-inch asphaltic stabilized base, 32-foot single bituminous paving including shoulders; low bidder, Elliott Brothers, Perry, $181,264;

Coal County—F-250 (2) Gr., U.S. 75 from S.H. 3 north, 7.804 miles 38-foot roadbed; low bidder, Stebbins Construction Co., Tulsa, $123,975;

Coal County—F-250(2) Surf., U.S. 75 on above location, 7.804 miles 8-inch special sub-base, 24-foot portland cement paving 24 feet wide; low bidder, Amis Construction Co., Oklahoma City, $584,544;

Coal County—F-250(2) Br., U.S. 75 on above location, widening 152-foot I-beam bridge from 22 to 28 feet on Rock creek, 120-foot detour bridge, reinforced concrete culvert, extension to reinforced concrete culvert; low bidder, Moore Bridge Co., Ada, $73,601;

Tillman County—F-375(5) Pt. 1 Gr., U.S. 70 from 3.996 miles west of Grandfield, west, 7.463 miles 38-foot roadbed, four reinforced concrete culverts; low bidder, W. D. Fulton Construction Co., Oklahoma City, $163,581;

Tillman County—F-375(5) Pt. 2 Gr., U.S. 70 from 3 miles west of Grandfield, west, 0.996 mile similar construction; low bidder, W. D. Fulton Co., $15,161;

Tillman County—F-375(5) Pt. 1 Surf., U.S. 70 from 3.996 miles west of Grandfield, west, 7.441 miles 8-12-inch soil subbase, 8-inch asphaltic stabilized base course, 38-foot single bituminous paving including shoulders; low bidder, Austin Construction Co., Dallas, Texas, $283,718;

Tillman County—F-375(5) Pt. 2 Surf., U.S. 70 from 3 miles west of Grandfield, west, .996 mile similar construction; low bidder, Austin Co., $37,209;

Harper County—SAP-581(2), U.S. 283 from U.S. 64 north, 6.175 miles 32-foot roadbed, 6-8-inch soil sub-base, 8-inch asphaltic stabilized base, 32-foot single bituminous paving including shoulders; low bidder, Broce Construction Co., Woodward, $154,667;

Greer County—SAP-645(3), S.H. 34 in Mangum on Pennsylvania avenue from South street to East Lincoln street, .552 mile roadbed and 7-inch portland cement paving of variable width; low bidder, Barnett & Tidmore, Mangum, $34,166;

Greer County—SAP-912(1), U.S. 283 in Mangum on Lincoln street from Louisiana to Pennsylvania avenue .150 mile roadbed and 7-inch portland cement paving of variable width; low bidder, Barnett & Tidmore, $9,849;

Major County—SAP-795(2) Gr. & Dr., U.S. 281 from Chester north, 7.089 miles 32-foot roadbed; low bidder, Jones & Phillips, El Reno, $64,706;

Major County—SAP-795(2) Surf., U.S. 281 on above location 7.089 miles 8-inch asphaltic stabilized base, 32-foot single bituminous paving including shoulders; low bidder, Park-Ward, Oklahoma City, $169,777;

Oklahoma County—SAP-812(2), U.S. 62 in Oklahoma City on 23rd street from Robinson avenue to Eastern avenue, 2.191 miles base repairs and 40-foot asphaltic concrete resurfacing; low bidder, Imperial Paving Co., Oklahoma City, $126,056;

Alfalfa County—SAP-995(2) Gr., S.H. 8 and 11 west through Burlington 6.926 miles 32-foot roadbed and .268 mile 7-inch portland cement paving of variable width in Burlington; low bidder, Honegger Brothers, Kingfisher, $147,091;

Alfalfa County—SAP-995(2) Surf., S.H. 8 and 11 on above location 6.662 miles 6-8 inch soil sub-base, 8-inch asphaltic stabilized base course, 32-foot single bituminous paving including shoulders; low bidder, R. R. Ryan Construction Co., Oklahoma City, $199,369;

Alfalfa County—SAP-995(2) Br., S.H. 8 and 11 on above location, 125-foot concrete slab span bridge on Stink creek, three reinforced concrete culverts, approach slab construction; low bidder, Ruel W. Little, Oklahoma City, $58,704;

Custer County—SAP-1074(1) Gr. & Dr., S.H. 54 from Weatherford north, 7.781 miles 32-foot roadbed; low bidder, Pallesen Construction Co., Oklahoma City, $149,680;

Custer County—SAP-1074(1) Surf., S.H. 54 on above location, 7.781 miles 6-inch soil sub-base, 8-inch asphaltic stabilized base, 32-foot single bituminous paving, including shoulders; low bidder, Broce Construction Co., $221,658; disapproved;

Custer County—SAP-1074(1) Br., S.H. 54 on above location 171-foot I-beam span bridge, 26 feet wide on Horse creek, 241-foot I-beam span bridge 26 feet wide, on Deep creek and reinforced concrete culvert; low bidder, Tway Construction Co., Oklahoma City, $135,554;

Cleveland County—SAP-1087(1), U.S. 77 in Norman on Robinson street to Flood avenue, .680 mile 30-foot roadbed, rock base 24-foot asphaltic concrete paving, estimated cost, $64,871.84; low bidder, Amis Construction Co., $69,895.

Arkansas Highway Awards Amount to $2,016,494

Contracts awarded early last month by the Arkansas State Highway Department totaled $2,016,494. By counties, they included the following projects:

Crittenden — Job No. 11422, State, Earle-North & South, 4.665 miles grade, minor drain, structure, gravel, base course and DEST, Graves Brothers, Pine Bluff, $76,356;

Cross—Job No. 11424, State, Fair Oaks-Junction U. S. 64, 1.252 miles grade, minor drain, structure and gravel base course, Graves Brothers, Pine Bluff, $23,719;

Woodruff—Job No. 11425, State, Patterson-South and McCrory-North, 4.581 miles grade, structure, gravel base course, D. F. Jones Construction Co., Little Rock, $121,629;

Cross — Job No. 11426, FAP S-341(2), Parkin-South, 3.618 miles grading, structures, bituminous surface course, D. F. Jones Construction Co., Little Rock, $100,757;

Jefferson—Job No. 2417, FAP F-284(11), Altheimer-Relocation, 4.364 miles grading, structures and three reinforced concrete slab span bridges, D. B. Hill, Little Rock, $227,318;

Jefferson — Job No. 2428, State, Pine Bluff, 0.836 miles of asphalt concrete hot mix surface course, Sam Finley, Inc., Atlanta, Ga., $20,868;

Lafayette—Job No. 3422, FAP S-467(2), Bradley North and South Resurfacing, 14.787 miles of bituminous surface course, Reynolds and Williams, Little Rock, $172,823;

Nevada—Job No. 3432, State, Rosston-North, 6.361 miles grading, structures, Portland concrete, stabilized base course and DEST, Ben F. Hawkins, Lake Village, Ark., $144,010;

Independence — Job No. 5366, Batesville-East, 2.084 miles flexible base course and double bituminous surface treatment, Reynolds and Williams, Little Rock, $28,370;

White—Job No. 5372, State, Rosebud-East, 3.667 miles grade, minor drainage, structures and crushed stone base course, Reynolds and Williams, Little Rock, $59,225;

Lonoke — Job No. 6341, Sate, Lonoke County resurfacing, 5.6 miles asphalt concrete hot mix base and surface course and flexible shoulders, Ben M. Hogan, Little Rock, $156,728;

Lonoke — Job 6433, FAP S-139(1),

Lonoke-South, 6.193 miles grading, drainage, structures, flexible base course and bituminous surface course, Bucton Construction Co., Inc., Hazen, $200,415;

Hot Spring—Job No. 6439, State, Jones Mills-Junction Highway 270, 4.988 miles of grading, structures, base course, bituminous surface course, Reynolds and Williams, Little Rock, $276,953;

Dallas — Job No. 7412, FAP S-355(1), Holly Springs-Sparkman, 7.177 miles grading, structures, gravel base course, Reynolds and Williams, $276,473;

Clark—Job No. 7414, FAP S-209(6), Antoine-East, 4.755 miles grading, structures, gravel base course and bituminous surface course, Southeast Construction Co., $130,842;

Van Buren—Job No. 8316, State, Clinton-East, 5.190 miles grading, drainage, structures, base course, Fell Vaughan, Contractor, North Little Rock, $60,756;

Johnson—Job No. 8319, State, Clarksville, Ozone No. 2, 3.409 miles crushed stone base course and dauble bituminous surface treatment, Interstate Construction Co., Inc., Pine Bluff, $37,458;

Benton—Job No. 9308, State, Vaughn-Gentry, 10.741 miles grading, structures and crushed stone base course, McClinton Brothers Co., Fayetteville, $108,927;

Benton—Job No. 9309, FAP S-368(2), Bentonville-Pea Ridge Road, 6.708 miles grading, structures, crushed stone base, Southeast Construction Co., Inc., $230,715;

Poinsett—Job No. 10418, FAP S-410(2), Waldenburg-Cross County Line, 9.099 miles of grading ,structures, gravel base course, Mississippi Valley Contracting Co., Inc., Paragould, $243,195;

Mississippi—Job No. 10420, State, Highway 61-East, 5.359 miles grading, minor drain, structures and flexible base course, M. & L. Construction Co., Little Rock, $95,940;

Cleveland—Job No. 1257, FAP F-31(6), Fordyce-Kingsland, 6.906 miles grading, structures, gravel base course, S. M. Dixon, Warren, $411,237;

Pulaski—Job No. C-60-10, FAP S-837(4), Ferndale-West Bridges, 351.83 feet of two reinforced concrete slab span bridge over Little Maumelle and McFadden Creeks, Grady Garms, Contractor, Little Rock, $30,773.

North Carolina Bids

(Continued from page 27)

Crosby Construction Co., Inc., Union, S. C., $42,008; moving buildings, George D. Beam, Sr., Crouse, N. C., $3,300;

Lincoln—4.56 miles of grading, paving, and structures from point on county road 1.4 miles southeast of N.C. 10 and 2.1 miles northwest of N.C. 27, east to point on County road at Cat Square; grading and paving, Ray D. Lowder, Inc., Albemarle, N. C., $81,410; structures, Wilson Construction Co., Inc., Salisbury, N. C., $33,711;

Graham—7.59 miles of grading, paving, and structures from point on county road east of Fontana, southeast to point in county road near Brock; Nello L. Teer Co., Durham, N. C., $783,820;

Northampton-Hertford—18 miles on N.C. 305 and U.S. 158 of paving from cross roads approximately three miles northwest of Rich Square to junction with U.S. 158 east of Jackson; from east town limits of Conway to junction of U.S. 258 west of Murfreesboro, and from Aulander to point east of Winton's Store; Sloan Construction Co., Inc., Greenville, S. C., $215,826;

Halifax—(bond project)—Bridge over Little Fishing Creek on county road between Aventon and Glenview; Pyramid Construction Co., Inc., Wilmington, N. C., $47,392;

Carteret—(part bond)—12.3 miles of paving on 8 sections of county roads: County road from end of 20-foot pavement on Harkers Island north to point on U.S. 70 near Otway; county road from Core Sound on Harkers Island northwest to junction with a 20-foot bituminous surface treated pavement; two parts from U.S. 70 west of Atlantic to Core Sound; from county road at Marshallberg north and west to paved county road; county road connection near Straits Post Office, and two parts on county roads north and south of U.S. 70 at Otway; Barrus Construction Co., Kinston, N. C., $68,441;

Craven-Jones—(bond project) — 19.3 miles of paving from Jones County line northeast to point near Brice's Loop Roads between Ready Branch and Brice's Creek-Loop Road west of Pollocksville; from U.S. 17 in Pollocksville, northeast to Craven County line, and Loop Road near Ready Branch on Jones-Craven County line; Dickerson, Inc., Monroe, N. C., $112,003;

Lenoir—(bond project)—5 miles of paving from point on paved county road, 2.3 miles east of N.C. 11, north to point on paved county road, 1.7 miles east of Deep Run; Barrus Construction Co., Kinston, N. C., $23,702;

Sampson—10.3 miles of paving on county road from Honeycutt Store via Hairs Store to junction with N.C. 242, and from Andrews Chapel Road to Concord Church via Elizabeth Chapel; F. D. Cline Paving Co., Raleigh, N. C., $47,742;

Bladen—(bond project)—9.2 miles of paving from Lyons Store to N.C. 87 at Carrolls Station; on Twisted Hickory Road from end of Peanut Road to Dublin, and from N.C. 211 in Richardson toward Dublin; F. D. Cline Paving Co., Raleigh, N. C., $46,399;

Pender—(bond project)—8.18 miles of paving on four sections of county roads in Pender County: From Watha-Long Creek Road to intersection of Brick Mill road; from Atkinson, via Rooks, to Negro Head road and drive to Atkinson School; from Fremont Street in Burgaw, and drives to white and colored schools, .5 mile; E. B. Towles Construction Co., Wilmington, N. C., $50,433;

Wake—Structure on U.S. 70A over westbound leg of Western Boulevard at State College Campus; Wilson Construction Co., Inc., Salisbury, N. C., $29,491;

Wake—3.95 miles of grading and paving from U.S. 70A at intersection of Harrison Drive in Cary, east to intersection with U.S. 1 and 64 near State Fair Grounds; grading and paving, C. G. Poole, Inc., Raleigh, N. C., $225,068; moving buildings, C. A. Widenhouse, Concord, N. C., $10,700;

Wayne—(bond project)—18.5 miles of surfacing on nine sections of county roads: From Best southeast to Lenoir County line; from Best north to Road 38; from Coker's Grist Mill to Lenoir County line; from Hood Swamp south toward New Hope; from Saulston northwest toward Patetown; from Best's Store to the Futrelle Farm; from Mt. Carmel Church to Patetown Road; from Patetown-Fremont Road to the Pikeville Road, and from Butt's Store to the Patetown-Euraka Road; Barrus Construction Co., Kinston, N. C., $64,177;

Cumberland—Culvert for Little Cross Creek on Murchinson Road at intersection with Jackson Avenue and Washington Drive in Fayetteville; Kitchin Construction Co., Fayetteville, N. C., $16,432;

Wilkes—(bond project)—Bridge over Yadkin River on county road between Wilkesboro and U.S. 421 at Cricket; John H. Brinkley, Thomasville, N. C., $188,137;

Cleveland—(bond project)—5.5 miles of paving from Washburn Siding, North (Blanton Road) from N.C. 26 at Union Church to paved county road (Horn Road); A. R. Thompson Contractors, Inc., Rutherfordton, N. C., $31,601;

Gaston-Lincoln—(bond project) — 5.9 miles of paving from N.C. 150 to Lincoln County line (Allran Road); from Cherryville north and connection to N.C. 274, and from Lincoln County line to Bethpage Church (Allran Road); C. G. Tate Construction Co., Concord, N. C., $37,232;

Lincoln—(bond project)—5.2 miles of paving from N.C. 150 to U.S. 321, and from Crouse to Bethpage Road; Gilbert Engineering Co., Statesville, N. C., $20,890.

West Virginia Opening Totals $1,670,870

West Virginia last month received bids totaling $1,670,870 for projects in fifteen counties, including the following:

Boone County—State Project 3036, 3.8 miles surface treatment, Racine-Madison Road (U.S. 119), Standard Asphalt & Tar Co., Charleston, $21,231, low; Abbott Construction Co., $21,898; John S. Gillispie, Inc., $22,270;

Cabell County—State Project 6129, 3.4 miles surface treatment, Cyrus Creek to Toms Creek Road (Sec. 30), Middle States Bituminous Corp., Ashland, Ky., $10,294, low; Harry Hatfield & Co., $11,408; John S. Gillispie, Inc., $11,646; M. & M. Construction Co., $14,274;

Doddridge County—State Project 3404-A, 8.1 miles surface treatment, West Union-Troy Road (W. Va. 18), Osborne Construction Co., Clarksburg, $22,087; Allen Construction Co., $23,387;

Fayette County — Federal Aid Interstate Project FI-94 (3), 2.344 miles grading, draining, asphaltic base, bottom and wearing course, Hico-Camp Lookout Road (U. S. 60), Andersons', Inc., Charleston, $165,669, low; Standard Asphalt & Tar Co., $178,357;

(Continued on page 48)

Southern Construction Projects

(Excerpted from Daily Construction Bulletin)

(Continued from page 28)

ments, approx. 9,000 ft. wharf and new trackage on wharf apron; cost, approx. $1,000,000.

BORGER — Borger Independent School District plans additions to elementary school buildings, cost approximately $900,000.

CORPUS CHRISTI—Corpus Christi Independent School District approved $2,500,000 bond issue for school buildings.

CORPUS CHRISTI — Navy Department, Public Works Office, let contract to Brown & Root, Inc., Houston, at $2,642,546 for parallel runway 13-31, taxiways and drainage, naval Air Station; Spec. 33056; NOy 71643.

DALLAS—City plans $5,000,000 bond issue for waterworks improvements.

DALLAS—City plans $2,700,000 bond issue for sanitary sewer and sewage disposal plants and $1,500,000 on storm sewer improvement.

DALLAS—City plans $300,000 bond issue for health administration building.

DALLAS — Texas Instruments, Inc., let contract to Jansen Construction Co., for manufacturing and engineering building, cost approximately $600,000.

DALLAS—First Baptist Church Congregation let contract to Ingle-Hayman Construction Company, Inc., at $1,500,000 for 5 story activities building.

DALLAS—Dallas County and City of Dallas let contract to Robert E. McKee, General Contractor, Inc., Dallas, at $8,708,109 for City-County Hospital and Clinic Building.

DALLAS—Housing Authority let contract to R. F. Ball Constr. Co., at $2,771,397 for housing project, Tex. 9-1-G.

DALLAS—City let contract at $698,313 to E. H. Reeder for water main, Contract No. 534.

DEER PARK — Deer Park Independent School District plans elementary school and gymnasium; $1,000,000 bond issue voted.

FALFURRIAS—Brooks County, will soon call for bids for Brooks County Hospital, estimated cost $500,000.

FORT HOOD — Corps of Engineers, Fort Worth, received apparent low bid of $2,012,748 from T. C. Bateson Construction Co., Dallas, for six 225-man barracks; Inv. ENG-41-443-52-51.

FORT SAM HOUSTON — Corps of Engineers, Galveston, let contract at $1,140,960 to Hill & Combs, San Antonio, for GCA facilities at Fort Sam Houston and warehouse for Brooke Army Medical Center, Inv. No. Eng-41-243-52-100.

FORT WORTH—Fort Worth Independent School District plans building program; $14,000,000 bond issue voted.

GALVESTON—Housing Authority received low bid of $557,682 from J. W. Bateson Co. for 100 negro public housing units in 30th and Church St. area.

HARLINGEN—Corps of Engineers, Galveston, let contract to E. B. Darby & Co. Assocs., Pharr, at $565,065 for concrete apron extension, Harlingen Air Base.

HARLINGEN — Harlingen Independent School District plans school building program; $750,000 bond issue voted.

HOUSTON—St. Mary's Siminary has plans in progress for buildings, cost approximately $2,000,000.

HOUSTON — Houston Lighting & Power Co., plans additional power plants over period of 3 years, cost approx. $80,000,000.

HOUSTON—Belfort Corp., plans 640 dwellings, subdivision, cost approx. $7,000,000.

KARNACK—Congressman Overton Brooks announced Army's approval of a $30,174,200 plant to manufacture propellants for guided missiles.

McALLEN—City expects plans ready for bids sometime in July for addition and remodeling Municipal Hospital, cost approximately $1,000,000.

MEXIA—Board of Texas State Hospitals & Special Schools, Austin, let contract at $630,670 to Milo Choate, Tyler, for award building at Mexia State Home.

MIDLAND—First Baptist Church Congregation has plans nearing completion for church building, cost, approx. $1,000,000.

PASADENA — Pasadena Savings & Loan Association has plans in progress for bank and office building, cost, approximately $1,000,000.

ROCKDALE — Rockdale Independent School District approved $1,000,000 bond issue for school building program.

SAN ANTONIO—Corps of Engineers, Galveston, received low bid from Glade Construction Co., Fort Worth, at $1,775,400 on Lot 1; from T. C. Bateson Construction Co., Dallas, at $51,366 on Lot 2; and from C. L. Browning, Jr., San Antonio, at $59,262 on Lot 3, for airmen's dormitories and facilities, Kelly Air Base; Inv. ENG-41-243-52-112.

SHERMAN—Sherman Independent School District has plans in progress for junior high school, cost approximately $1,150,000.

TARRANT COUNTY—District Engineer, Fort Worth, received low bid of $546,112 from J. B. Mayfield for drainage structures and excavation of channel, Part III, Fort Worth Floodway, Trinity River & Tributaries, CIVENG 41-443-52-52.

VICTORIA — Corps of Engineers, Galveston, let contract to W. L. Rea Construction Co., Corpus Christi, at $646,666 for aircraft refueling system, lubricating oil storage and utilities, Foster Air Base.

VICTORIA — Corps of Engineers, Galveston, let contract to Shelton Construction Co., Dallas, at $1,628,722 for nine airmen's barracks, two mess and administration buildings, academic building, cold storage building, remote receiver building, remote transmitter building, hydrogen and oxygen storage, three bachelor officers' quarters and two warehouses, Foster Air Base.

WACO—Baylor University has preliminary plans in progress for women's dormitory, cost approximately $1,000,000.

VIRGINIA

ALEXANDRIA — Potomac Electric Power Co. let contract for turbo-generator unit at plant, cost $16,000,000.

ARLINGTON—Arlington County let contract to Gunnell Construction Co., Washington, D. C., at $118,997 for Arlington County Public Health Center.

ARLINGTON — Schreiber Construction Corp., Washington, D. C., has low bid of $560,000 for new Page Elementary School.

FAIRFAX—Fairfax County Sanitary District let contract at $199,392 to Payne & Oliver Concrete Co., Inc., Falls Church, for installation of sewers, Contract No. 12.

FAIRFAX COUNTY—Fairfax County Commissioners sold $3,500,000 bond issue to Halsey, Stuart & Co., Inc., for school construction.

FORT EUSTIS—Corps of Engineers, Norfolk, received low bid from Pittsburgh-Des Moines Steel Co. at $152,500, all bids rejected, for 500,000 gal. elevated steel water storage tank; ENG-44-110-52-35.

FORT LEE—Engineers let contract to Buster P. Short, Petersburg, at $50,004 for repairs of certain roads; Inv. 44-055-52-59.

FORT STORY—Navy Department, Public Works Office, Norfolk, received low bid from Carter-Hassell Contracting Co., Norfolk, at $295,743 for additional facilities for harbor defense unit; NOy 71838.

JOHN H. KERR DAM — Corps of Engineers, Norfolk, received low bid of $124,029 from Neal Constr. Co. for access Hwy., right bank, CIVENG 44-110-52-51.

JOHN H. KERR DAM & RESERVOIR — Corps of Engineers, Norfolk, received low bid of $90,784 from Burkholder & Burkholder, Lynchburg, for relocation N. C. Secondary Roads at Spewmarrow and Grassy Creeks; CIVENG 44-110-52-53.

LANGLEY FIELD — National Advisory Committee on Aeronautics let contract to Wise Contracting Co., Richmond, at $196,000 for building and roads for landing loads track, L-5306, Langley Air Base.

LANGLEY FIELD — National Advisory Committee on Aeronautics received low bid from Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa., at $88,880 for 500,000 gallon elevated water tank, Langley Air Base, L-5360.

MANASSAS—Associated Contractors, Inc., Marion, submitted low bid of $64,924 for Prince William County Jail.

NORFOLK — Navy Department, Public Works Office, received low bid from Ames & Webb, Inc., Norfolk, at $89,811 for resurfacing and relocating East Field Boulevard, U. S. Naval Air Station; NOy 70247.

NORFOLK — Navy Department, Public Works Office, received low bid from Ervin & Snow, Inc., Norfolk, at $85,885 for replacement of two boilers and accessories in Building No. 25, U. S. Naval Fuel Facility (Craney Island); NOy 71046.

NORFOLK — Navy Department, Public Works Office, let contract to Wise Contracting Co., Richmond, at $1,448,000 for supply warehouse, Naval Air Station; NOy 71287.

NORFOLK — Navy Department, Public Works Office, received low bid from City Construction Co., Portsmouth, at $56,459 for foundry addition to V-28, O&R shops, U. S. Naval Air Station; NOy 71818.

NORFOLK — Navy Department, Public Works Office, received low bid from A & P Construction Co., Norfolk, at $125,369 for repairs to buildings, U. S. Naval Base; NOy 72511.

PORTSMOUTH—Naval Department, Public Works Office, Norfolk, let contract to Thorington Construction Co., Richmond, at $97,487, for dry dock No. 2, new floor, Norfolk Naval Shipyard; NOy 73385.

PITTSYLVANIA COUNTY — R. Stuart Royer & Assoc. Engr. let contract to English Const. Co., Altavista, Va., at $73,450 for dam.

PRINCE EDWARDS COUNTY—Board of Education let contract at $764,641 to Mottley Construction Co., Farmville, for Robert R. Moton Consolidated High School.

QUANTICO—Victor R. Beauchamp, Inc., Washington, D. C., has general contract at $469,890 for Marine Corps Elementary School.

QUANTICO — Navy Department, Public Works Office, Norfolk, received low bid from Victor R. Beauchamp, Washington, D. C., at $384,840 for Guadalcanal Area, water plants and associated facilities, Camps Barrett, Gonzage & Upshur, Marine Corps Schools; NOy 26059.

QUANTICO — Navy Department, Public Works Office, Washington, D. C., received low bid from Victor R. Beauchamp, Washington, D. C., at $66,890, Item 1, for heavy equipment shops building; Spec. 33124.

RICHMOND — Clopton Street Baptist Church Congregation received low bid of $186,220 for church and Sunday School building.

RICHMOND—Board of Education let contract at $172,804 to Howard-Mitchell Construction Co., for addition to Navy Hill School.

RICHMOND—Corps of Engineers let contract to Robert M. Dunville & Brothers, Richmond, at $165,869 for ceiling alterations to long term storage refrigerated warehouse; Inv. 44-110-52-34.

RICHMOND—Weatherford Memorial Baptist Church received low bid of $107,064 from E. Scott Rice for church building.

SOUTH HILL—Board of Trustees of Community Memorial Hospital received apparent low bid from English Construction Co., Altavista, at $678,700 for Community Memorial Hospital, Proj. Va-33.

SUNBRIGHT—Foote Mineral Co., embarking on a $3,000,000 expansion program.

VIRGINIA BEACH—Field Officers of Corps of Engineers recommended extensive improvements to restore and protect ocean beach and shoreline; total estimated cost $1,160,000; also recommends the construction at a later date, of 21 creosoted timber groins, estimated cost $864,500.

YORKTOWN — Navy Department, Public Works Office, let contract to Lang Construction Co., Hampton, at $1,737,000 for additional ammunition storage facilities, Naval Mine Depo; Spec. 33254; NOy 72415.

WEST VIRGINIA

BLUEFIELD — The Bluefield Sanitarium, Inc., announced plans for $500,000 expansion program.

CHARLESTON—United Fuel Gas Company plans construction of natural gas pipeline facilities in West Virginia, cost, $3,582,640.

CHARLESTON—Navy Department, Public Works Office, let contract to Neighborgall Construction Co., Huntington, at $111,090 for reroofing Buildings 302 and 305, NOP; Spec. 33221, NOy 71827.

HUNTINGTON — International Nickel Co. announced plans for a $1,395,000 expansion program.

MORGANTOWN—Secretary of the Interior Chapman announced award of contract to Southeastern Construction Co., Charleston, at $2,490,860 for new U.S. Bureau of Mines experiment station.

PHILIPPI — Broaddus Hospital Association has construction underway with B. F. Parrott & Co., Inc., Roanoke, Va., as general contractor at $1,297,300 for 120-bed general hospital on campus of Alderson-Broaddus College; total cost of project $1,575,000.

SOUTH CHARLESTON — Navy Department, Public Works Office, Norfolk, received low bid from E. L. Harris & Son, Charleston, at $52,655 for air conditioning and alterations for Building 311, Reserve Ordnance Gauge Facility, U. S. Naval Ordnance Plant; NOy 72440.

WELCH—City approved bond issue to provide a new $200,000 parking area.

Alabama Low Bids

(Continued from page 24)

Road, and two county projects. J. R. Bryant Contracting Co., 121 Molton St., Montgomery, Ala., $30,476.70.

LaMar County — SACP-392-A. 8.208 miles grading and draining on a county road from Fairview West to Alabama 19, North of Vernon. McKee Construction Co., Box 688, Jackson, Ala., $135,766.13.

Talladega County — SACP-406-B and 407-C(2). 9.897 miles bituminous treatments on Hubbard's Store-Grasmere Road, and from U.S. 78 South through Eastaboga toward U.S. 241. J. B. Maynard, Alex City, Alabama, $36,189.46.

Tallapoosa County—SACP-449-A. 7.850 miles bituminous treatments on a county road from Dadeville Northeast. E. J. Cobb Construction Co., Box 175, Montgomery, Ala., $10,330.35.

Shelby County — F.A.-S-480 (2) and SACP-433-B. 9.147 miles bituminous treatments on the road from Alabama 25 North to Westover. J. N. Maynard, Alex City, Ala., $32,130.00.

Tallapoosa County—SACP-498-B. 3.344 miles base and bituminous treatments on county road from Bethlehem Northeast. W. Henry Dear, Box 1137, Anniston, Ala., $30,100.70.

DeKalb County — F.A.-S-503 (2). 6.459 miles grading, drainage and bridges on a part of the Hammondville-Ider Road. Proposal A, roadway, Moss-Thornton Co., Box 127, Leeds, Ala., $84,758.37. Proposal B, bridges, Moss-Thornton Co., Box 127, Leeds, Ala., $36,348.00.

Pike County — F.A.-S-517 (3). 4.453 miles bituminous treatments from U.S. 29 South toward Goshen. Grant Construction Co., Box 1611, Montgomery, Ala., $23,783.78.

Fayette County—F.A.-S-529 (1). 12.398 miles grading, drainage and bituminous treatments on the Jones Mill-Hubbertville-Glen Allen Road. Clyde O. Mitchell, 104 N. 44th St., Birmingham, Ala., $369,-808.18.

Choctaw County — F.A.-S-545 (1), (2), SACP-666-A and 693-A. 11.190 miles base and bituminous treatment on the roads from Land to Alabama 29, Bladen Springs towards Silas and Land to Needham. S. T. Shepherd Construction Co., 4134 Terrace R, Birmingham, Ala., $99,-474.46.

Henry and Barbour Counties—F.A.-S-550 (1). 8.253 miles grading, drainage, bituminous treatments and bridge on the Abbeville-Alexander Mill Road. Proposal A, roadway, Newell Brothers Construction Co., Hope Hull, Ala., $208,919.59. Proposal B, bridge, McKee Construction Co., Box 688, Jackson, Ala., $23,316.18.

Mobile County — F.A.-S-551 (1). 13.038 miles grading, drainage, bituminous treatments on the bridge on the Celeste Road. Proposal A, roadway, Laidlaw Contracting Co., Spring Hill, Ala., $269,-249.99. Proposal B, bridge, Laidlaw Contracting Co., Spring Hill, Ala., $14,995.07.

Talladega County — F.A.-553 (1). .028 mile bridge over Clear Creek, northwest of Renfroe. McWhorter Construction Co., Milledgeville, Ga., $24,551.13.

Dale County—F.A.-S-556 (1). .166 mile bridge on the Mabson-Echo Road. Montgomery Construction Co., Box 255, Montgomery, Ala., $131,453.40.

Wilcox County — F.A.S-560 (1). 1.372 miles grading, draining and bituminous treatments and bridges on the road from Camden toward Fatama. Proposal A, roadway, L. J. Cousins, 18 S. Lewis St., Montgomery, Ala., $49,859.88. Proposal B, bridges, Baird & Latimer, Box 156, Selma, Ala., $45,562.75.

Wilcox County — SACP-643-E, 656-B, 6108-A & C, and 6109-A. 12.115 miles bituminous treatment on four county roads. McKee Construction Co., Box 688, Jackson, Ala., $36,896.98.

Dale County—SACP-791-D and 7127-C. 9.135 miles base and bituminous treatments on county roads from Ariton, east through Evergreen Church and Echo, Southeast to Pisgah Church. B. F. Williams Construction Co., Box 188, Ozark, Ala., $58,413.12.

Morgan County — SACP-1106-B. .045 mile bridge over Flint Creek on a county road between Hartselle and McKendry. McWhorter Construction Co., Milledgeville, Ga., $47,497.80.

Greene County — SACP-3101-A. 4.031 miles base and bituminous treatments on county roads East of Knoxville. J. R. Bryant Contracting Co., 121 Molton St., Montgomery, Ala., $35,982.48.

Projects on Southern

(Continued from page 5)

on a 20-acre site in Alabama to produce formaldehyde, urea resins, phenol resins, catalysts, and other materials to serve the plywood, furniture and paper industries in the Southern states.

Likewise, a new plant in Kentucky, employing 550 people in the manufacture of bulbs and tubing for electric lights, is adding to the South's diversification program. A new plant in South Carolina containing 175,000 square feet of floor space on a 124-acre tract of land, will give employment to 200 people initially in the manufacture of fiberglas.

A $6,000,000 electronic tube plant under construction on a tract of 90 acres of land on the Mobile division of the company at Oxford, Ala., containing about 300,000 square feet, is additional evidence of the South's increasing industrialization. When completed, it is expected this plant will employ 2,000 workers.

The South's iron and steel-making capacity is increasing. An estimated 650 gross tons of pig iron per day will be produced at a new blast furnace. The expansion program of one industry, entailing many millions, will boost its ingot capacity by 500,000 tons; another company expects to place 30 additional coke ovens in operation early in 1952, at a cost of $2,000,000. The first phase of a multi-million dollar expansion was begun when ground was broken in Atlanta in August, for erection of an electric furnace with a capacity of 100,000 tons of highest grade steel.

Power companies throughout the South continue the expansion of their facilities. The first unit of a new steam-electric generating plant at Goldsboro, N. C., which will make available 550,000,-000 kilowatt-hours a year in eastern North Carolina went into operation during the year. Construction of a second unit was started. Expansion of a steam-electric generating plant in North Carolina to cost more than $30,000,000 has been announced, which will increase its capacity by 250,000 kilowatts, and make it one of the largest steam power plants in the country. Expansion programs valued at more than $200,000,000 have been announced by many other business-managed power companies in the South, to help satisfy the growing demands of the region's rapidly expanding industries.

Stabilization

(Continued from page 40)

visualize a condition where engineers would be entirely justified in using calcium chloride in the treatment of roads with traffic counts of less than 25 vehicles per day. Although roadway expenditures normally run hand in hand with assessed valuations, population, and traffic count, this is not always true. Thus, many engineers find it necessary, because of budgetary limitations, to forestall high type surfaces until traffic counts reach unusually high figures. This is important to us in the discussion of stabilization, because so often it is more economical to use a type easily adaptable to stage construction. Then bases may be built up over a period of years, during which time traffic counts are sure to increase.

In general, we believe the only practical approach open to the engineer on county and local roads is "What can I most readily construct that will adequately serve the need and still be the most economical."

We have not tried to answer the many questions that may and will arise when talking of stabilization, but instead have tried to point out the major considerations necessary in the proper planning of a program by the engineer on local road construction.

West Virginia Openings

(Continued from page 45)

Fayette County — Federal Aid Interstate Project FI-176 (7), 2.301 miles grading, draining, asphaltic base, bottom and wearing course, Hico-Camp Lookout Road, (U. S. 60), Andersons', Inc., Charleston, $159,037; Standard Asphalt & Tar Co., $171,681;

Gilmer County—State Project 3111-A and B (Pt.) and 3322, 10.04 miles surface treatment, Glenville-Spencer Road (U. S. 33 and U. S. 119), Feather Construction Corp., Morgantown, $55,464, low; A. A. and D. M. Bostic, $60,672;

Kanawha County—State Project 3680, cleaning and painting Kanawha City bridge No. 912 (U. S. 119), G. R. Heihle & Co., Parkersburg, $28,900, low; P. N. Spanos, $33,950; Gus Verious, $34,998; Polus & Omiros, $37,270;

Kanawha County—State Project 5253, 1.5 miles surface treatment, Oakes Road to Davis Creek Road (Sec. 12-4), Andersons', Inc., Charleston, $8,675; Standard Asphalt & Tar Co., $8,938; M. & M. Construction Co., $9,656;

Kanawha County—State Project 221-A, .067 of a mile of Washington Street widening (U. S. 60) and .055 of a mile of Chesapeake Avenue widening, grading, draining, cement concrete pavement widening and asphalt concrete wearing course, Charleston Construction Co., Charleston, $20,355, low; Andersons', Inc., $21,627;

Lincoln County—Federal Aid Secondary Project S-613 (1), 2.724 miles grading, draining and traffic bound base course (Type B) revised and bridge, Spurlockville-Bulger Road (Sec. 62), Paul Price, Huntington, $126,692, low; L. S. Coleman Co., $138,902; Howard Price & Co., $143,103; Forbes Construction Co., $158,107; Smith Construction Co., $187,618;

Marion County—State Project 6329, 1.7 miles surface treatment, Bennsfield Road from Fairview Junction to Monongalia County Line (Sec. 22), Allen Construction Co., Manning, W. Va., $7,110, low; General Paving Co., $7,732;

Mineral County—State Project 122-A, 4.8 miles surface treatment, Claysville-Junction W. Va. 42 Road (U. S. 50), Potomac Construction Co., Martinsburg, $40,310;

Mingo County — State Project 3345, cleaning and painting Gilbert Bridge No. 887 (U. S. 52), G. R. Heihle & Co., $3,820, low; P. N. Spanos Co., $4,250; Polus & Omiros, $5,027;

Mercer County—S.632(1), grading and paving, Brown & Wright, Princeton, $310,236; Ralph E. Mills Co., $313,738; Adams & Tate Construction Co., $350,296; Vecellio & Grogan, $357,311; Keeley Construction Co., $355,878; Smith Construction Co., $424,228;

Monongalia County — State Project 5744, 2.4 miles surface treatment, Buckeye Road from W. Va. 7 to Pennsylvania Line (Sec. 39), Feather Construction Corp., Morgantown, $8,394, low; Allen Construction Co., $8,799; General Paving Co., $8,881;

Morgan County—State Projects 5885 and 6194, 5.2 miles surface treatment, Johnson's Mill Road (Sec. 38-3, 24 and 8), Potomac Construction Co., $26,313;

Ohio County — UL203(9), Wheeling bridge, George Vang, Inc., Pittsburgh, $522,053; Baker & Hickey Co., $640,693; Dravo Corp., $647,474; Monty Brothers, $770,946; Agnew Construction Co., $1,174,952;

Raleigh County—State Project 3354-A and B, 16.59 miles surface treatment, Beckley-Whitesville Road (W. Va. 3), Standard Asphalt & Tar Co., Charleston, $99,139; Adams & Tate Construction Co., $99,708; A. A. and D. M. Bostic, $103,579;

Wayne County—State Projects 51-B, 2218, 3511 and 3733, 7.66 miles surface treatment, Wayne to Rich Creek Road (W. Va. 37), John S. Gillispie, Inc., Huntington, $35,083; Middle States Bituminous Corp., $35,661.

Georgia June Bids at $2,810,905.92

Fourteen projects in fifteen Georgia counties were bid last month at $2,810,905.92.

Lowndes—Federal Aid Project No. F-001-1(2), 6.639 miles of grading and paving on the Valdosta, Georgia-Jasper, Florida Rd., S.R. 7, U.S. Route 41. Begins approximately five miles south of Valdosta and then partly on relocation, extends south to Lake Park. Georgia-Alabama Paving Co., Columbus, Ga., $504,998.60.

Glynn—Federal Aid Project No. F-007-4 (1) CT. 1. Substructure of a bridge at Jekyll Creek on the Brunswick to Jekyll Island Rd. Tidewater Foundation Co., Savannah, Ga., $274,301.00.

Dougherty—Federal Aid Project No. FG-026-2(1), FG-093-1(1) and ASG-1299 (2). Railroad grade crossing flashing light signals at three crossings the Ga. Northern Railway in Dougherty County in locations described as follows: FG-026-2(1) Albany-Sylvester Rd., S.R. 50, in East Albany. FG-093-1(1) Albany-Moultrie Rd., S.R. 133 at Pecan City. ASG-1299(2) located on S.R. 257 between S.R. 133 and S.R. 50 approximately 2 miles south of S.R. 50.

Worth and Tift Counties—Federal Aid Project No. F-026-2(3), 11.863 miles of grading, paving, three bridges and one overhead bridge at the A.C.L. Railroad on the Sylvester to Tifton Rd., S.R. 50. Begins at S.R. 33 in Sylvester and extends (partly in relocation) to a point near the west city limits of Ty Ty and also including a connection along Hunton St. in Poulan. White Construction Co., Bronson, Fla., $920,046.12.

Fannin County—Federal Aid Project No. F-057-2(1), 2.951 miles of grading and paving on relocation of the Blue Ridge-McCaysville Rd., S.R. 5. Begins in Blue Ridge approximately 2100' north of the L&N Railroad crossing on S.R. 5 and extends northwest to connect with present S.R. 5 northwest of Blue Ridge. MacDonagald Construction Co., Atlanta, Ga., $314,698.78.

Calhoun—Federal Aid Secondary Project No. S-0526 (4), 6 miles of grading, base and surface treatment on the Arlington to Morgan Rd., S.R. 45. Begins at the intersection of S.R. 62 in Arlington and extends northwest toward Morgan. Oxford Construction Co., Albany, Ga., $116,115.42.

Berrien County—Federal Aid Secondary Project No. S-0553 (4), 4.573 miles of grading and paving on the Nashville-Tifton Rd., S.R. 125. Begins approximately 10 miles north of Nashville and extends toward Tifton. E. F. Groover, Moultrie, Ga., $68,801.32.

Pike County—Federal Aid Secondary Project No. S-0759 (1), 5.052 miles of grading, base and surface treatment on the Molena to Meansville Rd., S.R. 109. Begins at S.R. 3 approximately 4 miles north of Zebulon and extends west toward Molena. Lothridge Brothers, Gainesville, Ga., $107,937.65.

Dade County—Federal Aid Secondary Project No. S-0812 (2), 2.117 miles of grading, base and surface treatment on the Trenton to Alabama State Line Rd. Begins approximately 3.4 miles west of Trenton and ends at the Alabama State Line. Ledbetter-Johnson Co., Rome, Ga., $110,329.36.

Murray County—Federal Aid Secondary Project No. S-0824 (3), 6.458 miles of grading, base and surface treatment on the Spring Place to Cleveland, Tenn. Rd., FAS-Route 824. Begins approximately 9.8 miles north of Spring Place and ends at the Tennessee State Line. W. L. Cobb Construction Co., Decatur, Ga., $119,764.39.

Henry County—Federal Aid Secondary Project No. S-0866 (2) CT. 2. Bridges at Indian Creek and Cotton Creek and approximately 450 feet of graded and paved approaches on the McDonough-Decatur Rd., S.R. 155. Henry Newton Co., Decatur, Ga., $109,985.31.

Lee County—State Aid Project No. PR-1022-A (2), 1.800 miles of grading, preparation of base and surface treatment on the Albany to Palmyra Rd. Begins at the Dougherty County line and extends north via Palmyra toward Fowlton Creek. Oxford Construction Co., Albany, Ga., $18,983.30.

Echols County—State Aid Project No. SAP-1219-A(2), 3.532 miles of grading and surface treatment on the Mayday to Homerville Rd., S.R. 187. Begins in Haylow and extends to Clinch County line. Leno DeShong Land Clearing Co., Valdosta, Ga., $89,745.71.

Corps of Engineers Marks 177th Year

The Army Corps of Engineers last marked its 177th anniversary, latest milestone in a history dating from June 16, 1776, when the Continental Congress created the post of Chief of Engineers, with two assistants.

Long known for its military achievements, the Corps also has a long tradition of civil works achievements, dealing mainly with inland waterways, flood control, and water conservation. These latter activities were expanded by Congress following World War II.

During that war, Corps of Engineers personnel numbered nearly a million—700,000 military and 265,000 civilian personnel—its all-time peak. Military tasks of the Engineers have expanded again since the outbreak of the Korean war, but not to the exclusion of civil works which continue at a substantial level because of their long-range economic importance.

The Corps of Engineers, now the third largest branch of the Army, is exceeded in size only by the Infantry and the Artillery.

Lt. Gen. Lewis A. Pick, builder of the Ledo Road and co-author of the Congressionally-approved Pick-Sloan plan for the development of the Missouri River Basin, is the present Chief of Engineers. He assumed that office on March 1, 1949.

Expanded Shale Firms Form Institute

Advertising, information, research and setting of minimum standards will be handled by the recently organized Expanded Shale Institute for the industry.

Alex T. Mickle, executive vice president of The Featherlite Corp. of Dallas, said that this work will be directed by an engineer who is an authority on lightweight concrete.

A number of applicants are under consideration.

The Institute was formed by leading producers from twelve states and Canada. Officers are S. Carl Smithwick, Portland, Ore., president; W. W. Allen, St. Louis, first vice president; Alex R. McVoy, Dallas, second vice president; J. Murray Black, Buffalo, secretary, and A. R. Waters, Kansas City, treasurer.

Member companies are in process of naming their representative to the board of directors. Mr. Mickle has appointed Harvey Hicks Allen to represent his firm. Mr. Allen is a vice president and chief engineer of the Featherlite plant at Strawn.

Attending the organization meeting were Harvey Hicks Allen and George Bickel of the Featherlite Corp., Dallas; Ralph Rogers and Alex R. McVoy, Texas Industries, Dallas; William Thomas, McNear Brick Co., San Rafael, Calif.; J. Murray Black, John H. Black Co., Buffalo; A. R. Waters, Carter-Waters Corp., Kansas City; W. W. Allen, W. W. Allen Jr. and L. S. Meyer, Hydraulic Press Brick Co., St. Louis; B. F. Park, Buildex, Inc., Ottawa, Kan.; William Poston and Frank Sedlak, Poston Concrete Products Co., Springfield, Ill.; John Roberts, Southern Lightweight Aggregate Corp., Richmond, Va.; W. Chester Smith, Cooksville Co., Ltd., Toronto, Canada; C. P. Hegan, Allan P. Taylor and Phillip Comstock, Kentucky Lightweight Aggregates, Inc., Louisville, Ky.; C. H. Snyder and R. G. Martin, Sunnyhill Aggregates Corp., New Lexington, Ohio; George I. Greenup, Lake City Lightweight Aggregates Corp., Lake City, Tenn.; S. Carl Smithwick, Smithwick Concrete Products, Portland, Ore.

Membership in the Institute is limited to those meeting the standards of quality as established and using the rotary kiln process.

Teco Manager Named

Gordon T. O'Neill, 29, has been appointed manager of the Chicago office of Timber Engineering Co., an affiliate of National Lumber Manufacturers Association.

A structural engineer, Mr. O'Neill will be in charge of timber connector sales and timber engineering consultation services available to architects, engineers and builders in that area.

June Awards

(Continued from page 20)

of course, already has it super-toll road under way.

Housing starts through the country remained high in May, the latest month for which figures are available, according to the Bureau of Labor Statistics of the Department of Labor, which says that the 107,000 new permanent non-farm dwelling units begun represented a small decline from the April figure. For the first five months of the year, the number of housing starts was 455,600 or about 1,900 under the January-May, 1951 total.

One section of the South—the Southeast—will see projects started involving an expenditure estimated at $16,700,000, according to a release from Atlanta office of the Department of Commerce, which reveals that the new construction will be mostly commerical, religious, entertainment and municipal work.

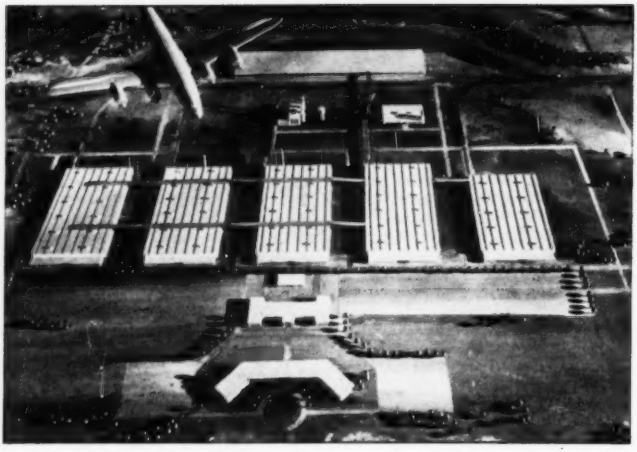
The projects included hotels in Atlanta, Augusta, Miami, and Aiken, this latter in South Carolina; two bank buildings, forest fire lookout towers throughout Georiga, and several churches. One of the hotels, to be located at Augusta, will cost almost $2,000,000.

The work is covered under applications approved by the National Production Authority. Allotments were for materials to be delivered in the third quarter of 1952, or in subsequent quarters, but if the current steel strike continues, they will be subject to revision. Some 500 additional applications are still pending.

What would have been a heartening harbinger in the current confusion of construction industry difficulties was an announcement by the Celanese Corporation of America that it is resuming expansion of its Celriver, South Carolina plant "with the arrival of adequate materials and equipment." The program was temporarily deferred three months ago because of the slow-down in rate of materials deliveries. The steel strike, however, is expected to disrupt the schedule.

How shortages and strikes are affecting another project is seen from the announcement on a large Arkansas construction project that the generator installation has been delayed about two months due to the difficulties in obtaining materials and to various work stoppages. On a Virginia office builing, one-fourth of the steel was erected in November. Work was scheduled to start August 1 on the balance, but the steel strike will probably enforce another postponement.

Producers, manufacturers and re-sellers of some building and construction materials have been permitted to adjust their ceiling prices "to reflect certain transportation costs resulting from freight rate increases." Included are asbestos cement shingles, sheets and pipe; asphalt and tarred roof products, ceramic floor and wall tiles, clay drain tile, concrete products, fibre insulating board, gypsum products, structural clay and allied products, vitrified sewer pipe,



Architect's model of General Electric Company's Appliance Park, being built near Louisville, Ky. The $200,000,000 project will house G.E.'s Major Appliance Division and eventually will employ about 16,000 people.

blast furnace slag, calcined gypsum plasters, cement, crushed stone, sand and gravel, lightweight aggregates and lime.

The much criticized Regulation X was modified early last month to permit more liberal credit terms for conventionally-financed one to four-family residential projects built after August 3, 1950. No change, however, was made in regulations for non-residential properties.

The Federal Housing Administration and the Veterans' Adminstration were authorized to change their related regulations covering F. H. A. insured mortgages and V. A. guaranteed loans to bring them generally in line with the revised Regulation X. A similar change was authorized in terms for rural housing loans made by the Farmers Home Administration.

As described by the Federal Reserve and Housing and Home Finance agencies, smaller down payments apply in varying degrees from the lowest to the highest priced homes. For F. H. A. and conventional loans on one to four-family residences, the down payment has been reduced from ten to five per cent on houses sold at $7,000 or less. From that figure to $25,000, the payments take a gradual curve rising from ten to forty per ceent.

The schedule of down payments, as revealed by the two agencies, shows proportionately adjusted down payments for veterans, in accord with the preference angle required by the Defense Production Act. No down payment is required for houses up to $7,000. For those sold at $25,000 or more, the payment has been reduced to thirty-five per cent.

Minumum down payment requirements for multi-unit structures (those with more than four family units) have been revised downward. The range is from ten to forty per cent, as compared with seventeen to fifty per cent before.

Portland Cement Group Promotes Staff Members

Promotion of four staff members of the Portland Cement Association was announced by Smith W. Storey, chairman of the board of directors. The four elected to new positions are:

G. Donald Kennedy, formerly assistant to the president and consulting engineer, promoted to vice president.

W. D. M. Allan, formerly director of promotion, promoted to the post of vice president for promotion.

Evelyn Pinkerton and J. L. Schneider appointed assistant secretaries.

Mr. Kennedy joined the Association Jan. 1, 1950, after many years of wide and varied experience in the fields of structural, municipal and highway engineering. A graduate of the University of Michigan, Mr. Kennedy served as State Highway Commissioner in Michigan and vice president of the Automotive Safety Foundation before joining the Association.

Mr. Allan is a veteran of 33 years with the Association. Following his graduation from Illinois State Teachers College, he joined the P.C.A. field promotion staff in 1918. Since that time he has served as manager of the association's cement products bureau, director of promotion and secretary of the association prior to his present appointment. He will retain his duties as secretary.

Miss Pinkerton is the first woman officer in the history of the association. She joined the P.C.A. staff in 1933 and served for eight years as secretary to Frank T. Sheets, association president who died last November.

Mr. Schneider, who joined the association in September 1948, will continue his duties as publications editor of the advertising and publication bureau in addition to his new responsibilities.

Blackall Nominated Pres. of Mechanical Engineers

Nomination of Frederick S. Blackall, Jr., president and treasurer of the Taft-Peirce Manufacturing Co. of Woonsocket, R. I., as 1953 president of the American Society of Mechanical Engineers, has been announced. Mr. Blackall heads a slate of new nominees, including four regional vice presidents and two directors-at-large, submitted by the society's nominating committee. Since only one name is presented for each office, nomination is tantamount to election.

Election will take place in the Fall by letter ballot of the membership of over 35,000 engineers. The new officers will begin their terms at the conclusion of the ASME annual meeting next December. Mr. Blackall will succeed Reginald J. S. Pigott, director of the engineering division of Gulf Research & Development Co. of Pittsburgh, a subsidiary of Gulf Oil Corporation.

Regional vice presidents nominated: Henry R. Kessler (renomination) manager, Republic Flow Meters Co., New York, N. Y.; Paul R. Yopp, district sales manager, Babcock & Wilcox Co., Atlanta, Ga.; Ben George Elliott, professor of mechanical engineering, University of Wisconsin, Madison, Wis., and Harry R. Pearson, personnel director, Dallas Power and Light Co., Dallas, Tex.

Nominated as directors-at-large:

David W. R. Morgan, vice president, Westinghouse Electric Corp., Philadelphia, Pa.; Ralph L. Goetzenberger, vice president, Minneapolis-Honeywell Regulator Co., Washington, D. C.

Mr. Blackall entered the employ of the Taft-Peirce Manufacturing Co., makers of machinery and tools, in 1922. He became vice president and general manager in 1929 and has been president and treasurer since 1933. He was born at Roselle, N. J., Nov. 26, 1896. He was graduated from Yale University in 1918 with a B.A. degree, and attended the U. S. Naval Academy Third Reserve Officers School the same year. In 1917-18 he served in the U. S. Navy in this country and overseas with the rank of Ensign. In 1922 he received an S.B. degree from Massachusetts Institute of Technology.

During World War II Mr. Blackall was a member of the U. S. Navy War Manpower Survey Committee, First Naval District; Victory Fund Committee of Rhode Island; Precision Tools and Machine Tool Industry Advisory Committees, and the War Production Board.

Ceremonies Mark Start on Solvay Plant

Start of construction of the Perkins plant of the Solvay process division, Allied Chemical & Dye Corp., was formally marked late last month by a flag-raising ceremony at Moundsville, W. Va. The plant will manufacture chlorine and caustic soda, two of the most important industrial chemicals. Named in honor of R. H. Perkins, a retired vice president of Solvay, the $15,000,000 project is the Solvay Division's first operation in West Virginia.

Attending the luncheon and ceremony were some 150 community and Solvay officials and guests from this Ohio Valley area.

The principal speaker of the day was A. B. Chadwick, Solvay President, who reviewed development of the company and its place in the U. S. industrial scene.

Vice President Carlton Bates, welcomed the guests and introduced Solvay officials.

Selection of the 400-acre Moundsville site was influenced by the presence of adequate salt deposits, electrical power and water, good transportation facilities, and the growing market demands of Southern industry for chlorine and caustic soda.

R. C. Skinner will be the resident manager at Moundsville when the plant is completed. Formerly Mr. Skinner was the supervisor of the Huntsville, Ala., government-owned chlorine plant which Solvay operated under lease for five years. Currently Mr. Skinner is supervising preliminary construction work at Moundsville.

The contract covering rough grading and road building and railroad track for the new plant has been awarded to the Seabright Construction Co. of Wheeling, W. Va. This work is now under way.

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Southern Ports Listed Among Country's Expansions

Ports—both sea and inland—have passed the half-way mark of the biggest port facility improvement program ever undertaken in the history of water transportation in the United States.

A survey made by The American Waterways Operators, Inc., the national association of the barge and towing vessel industry, shows more port improvement projects undertaken this year than in any previous year on record. Projects in the planning stage also are more numerous.

Growth of the nation's foreign and domestic waterborne commerce has made these improvements necessary.

New York is working on a two-year program involving the expenditure of 75 million dollars in municipal and private funds.

Port improvement funds totaling $30,000,000 will be required to complete the Baltimore program.

Philadelphia has adopted a port improvement program to cost more than four million dollars.

Georgia's Port Authority will complete in November an improvement program at the port of Savannah for which 20 million dollars were appropriated.

Boston, Mass., is expanding and improving its port facilities at a cost of 7 million dollars.

Next September North Carolina will complete a five-million-dollar improvement program at the twin ports of Wilmington and Morehead City.

Mobile, Ala., recently placed in operation a new $3,500,000 grain elevator as a part of its $35,000,000 port plant.

At New Orleans, La., the municipal grain elevator is being doubled in capacity and new wharves have been built under a twenty-million-dollar improvement program.

All ports on the Pacific Coast are augmenting the shipping facilities and formulating plans for additional channel, dock and terminal capacity.

Houston, Tex., has a long-range improvement program calling for the expenditure of thirty-two million dollars. New wharves have been built and the channel is being deepened and widened.

The Gulf ports of Brownsville, Beaumont, Gulfport, Pensacola, Galveston, Port Arthur, Corpus Christi and Lake Charles all have projects and the new port of Harlingen, Tex., on the Gulf Intracoastal Waterway is adding docks, warehouses and terminals. A second deep water channel and turning basin and elimination of a traffic bottleneck are covered by the Corpus Christi program.

The Brazos River Harbor Navigation District has financed a deep-water port for Freeport, Tex., at an estimated cost of $2,600,000.

Jersey City has approved a water-rail-truck terminal to cost $35,000,000. Port of Albany, N. Y., is seeking a deeper ship channel and additional port facilities. Buffalo, N. Y., has an expansion program.

Sanford, Fla., on the St. Johns River will build a barge terminal and warehouse.

Inland, the most ambitious port-improvement project completed this year to date was the closing of the Tennessee Chute of the Mississippi River at Memphis, Tenn., to create an off-river harbor and 6,800 acres of flood-protected sites for new industries.

An engineering firm has mapped for the Port of Baton Rouge, La., a comprehensive port development program comprising a new public wharf for ocean-shipping and barge traffic, an off-river barge harbor and two large areas for industrial sites.

Other major projects on the Mississippi River are the barge docks costing $1,500,000 on the new Chain of Rocks Canal at Granite City near St. Louis, and barge harbors at Minneapolis and St. Paul, Minn. St. Louis has approved municipal wharf improvements.

Preliminary steps have been taken paving the way for a two-million-dollar river terminal on the Ohio River at Louisville, Ky.

The Chicago Port Authority (created this year by the Illinois Legislature) is the author of an elaborate program for increasing the capacity of the Chicago harbors as well as of the several channels comprising the Illinois Waterway System.

Maryland Engineers Hold Summer Meeting

This year's summer meeting of the Maryland Association of Engineers was declared a big success, according to Louis Kravetz, secretary, who said more than one hundred fifty members and their families attended the affair at Ocean City, Maryland's seaside resort.

Walter C. Hopkins, deputy chief engineer of the Maryland State Roads Commission, is president of the association, with Ben Dyer, Hyattsville consulting engineer, first vice president, and James H. McKay, municipal highways engineer of Baltimore, second vice president. Christian J. Lortz, municipal highways district engineer, is treasurer.

INDUSTRIAL

	Contracts Awarded June, 1952	Contracts to be Awarded	Contracts Awarded First Six Months 1952
Ala.	$2,306,000	$1,580,000	$103,052,000
Ark.	6,000,000	600,000	11,950,000
D. C.	.....	.....	9,400,000
Fla.	2,301,000	1,950,000	27,397,000
Ga.	1,493,000	1,077,000	59,408,000
Ky.	100,000	8,800,000	4,100,000
La.	30,658,000	9,784,000	167,426,000
Md.	450,000	500,000	67,433,000
Miss.	2,460,000	28,050,000	27,156,000
Mo.	235,000	85,000	5,594,000
N. C.	438,000	1,750,000	35,898,000
Okla.	27,042,000	20,000	31,435,000
S. C.	40,231,000	6,073,000	45,287,000
Tenn.	3,059,000	2,950,000	25,601,000
Texas	7,429,000	122,065,000	134,999,000
Va.	16,180,000	3,650,000	17,784,000
W. Va.	4,069,000	4,978,000	37,451,000
TOTAL	$144,431,000	$193,912,000	$861,371,000

PUBLIC BUILDING

(City, County, State, Federal; Hospitals)

	Contracts Awarded June, 1952	Contracts to be Awarded	Contracts Awarded First Six Months 1952
Ala.	$2,777,000	$3,470,000	$18,505,000
Ark.	137,000	1,966,000	19,143,000
D. C.	1,311,000	12,112,000	12,087,000
Fla.	3,469,000	5,690,000	23,122,000
Ga.	6,485,000	6,905,000	33,094,000
Ky.	.....	8,140,000	23,400,000
La.	1,441,000	8,243,000	23,230,000
Md.	7,319,000	49,484,000	64,414,000
Miss.	1,067,000	1,457,000	13,936,000
Mo.	1,501,000	4,325,000	9,980,000
N. C.	11,969,000	27,125,000	34,768,000
Okla.	21,000	2,095,000	12,760,000
S. C.	1,574,000	3,865,000	20,601,000
Tenn.	9,906,000	24,444,000	23,737,000
Texas	10,469,000	38,749,000	102,937,000
Va.	7,215,000	19,667,000	47,542,000
W. Va.	275,000	1,450,000	575,000
TOTAL	$66,936,000	$219,187,000	$483,826,000

ROADS, STREETS, BRIDGES

	Contracts Awarded June, 1952	Contracts to be Awarded	Contracts Awarded First Six Months 1952
Ala.	$144,000	$2,100,000	$8,195,000
Ark.	3,151,000	1,100,000	8,051,000
D. C.	.....	60,000	102,000
Fla.	2,982,000	3,930,000	22,618,000
Ga.	.....	45,590,000	12,119,000
Ky.	7,543,000	3,840,000	23,320,000
La.	15,031,000	1,800,000	34,844,000
Md.	2,953,000	2,100,000	16,475,000
Miss.	487,000	.....	5,518,000
Mo.	760,000	2,840,000	26,815,000
N. C.	1,340,000	1,620,000	19,665,000
Okla.	2,947,000	1,740,000	22,919,000
S. C.	.....	1,380,000	11,843,000
Tenn.	.....	4,820,000	10,028,000
Texas	15,391,000	3,450,000	76,274,000
Va.	1,637,000	1,320,000	10,185,000
W. Va.	1,955,000	1,120,000	5,809,000
TOTAL	$56,321,000	$78,810,000	$314,780,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	Contracts Awarded June, 1952	Contracts to be Awarded	Contracts Awarded First Six Months 1952
Ala.	$2,673,000	$8,205,000	$36,922,000
Ark.	.....	.....	843,000
D. C.	.....	1,520,000	5,850,000
Fla.	13,983,000	5,609,000	64,426,000
Ga.	4,414,000	705,000	34,666,000
Ky.	.....	949,000	4,891,000
La.	4,125,000	1,980,000	26,460,000
Md.	3,090,000	980,000	53,322,000
Miss.	864,000	550,000	7,283,000
Mo.	505,000	19,084,000	3,311,000
N. C.	343,000	4,660,000	12,625,000
Okla.	.....	2,150,000	541,000
S. C.	2,188,000	1,150,000	11,293,000
Tenn.	2,578,000	4,900,000	31,154,000
Texas	11,324,000	23,518,000	92,960,000
Va.	504,000	600,000	37,121,000
W. Va.	.....	.....	5,442,000
TOTAL	$46,591,000	$76,560,000	$449,110,000

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	Contracts Awarded June, 1952	Contracts to be Awarded	Contracts Awarded First Six Months 1952
Ala.	$1,290,000	$590,000	$4,395,000
Ark.	1,280,000	880,000	4,673,000
D. C.	.....	2,132,000	1,821,000
Fla.	5,812,000	6,355,000	69,689,000
Ga.	3,969,000	2,410,000	13,359,000
Ky.	.....	19,803,000	5,577,000
La.	8,130,000	2,060,000	21,676,000
Md.	223,000	2,650,000	6,269,000
Miss.	453,000	310,000	10,318,000
Mo.	198,000	5,637,000	4,601,000
N. C.	224,000	2,630,000	22,394,000
Okla.	1,347,000	5,700,000	17,040,000
S. C.	2,834,000	1,065,000	15,082,000
Tenn.	11,606,000	6,255,000	26,060,000
Texas	10,008,000	12,624,000	107,699,000
Va.	800,000	4,060,000	23,465,000
W. Va.	.....	.....	60,000
TOTAL	$43,169,000	$74,641,000	$354,178,000

Lion to Spend $30,000,000 for Louisiana Plant

Lion Oil Co. of El Dorado, Ark., has announced plans to build a $30,000,000 chemical plant at Luling, 14 miles north of New Orleans on the Mississippi River.

The new plant will be used for the production of anhydrous ammonia.

T. M. Martin, president of Lion Oil Co., said that the plant will have a daily capacity of 300 tons of anhydrous ammonia, most of which will be converted into ammonium nitrate. Natural gas for raw material and for fuel will be supplied by The Texas Co. for its production in the immediate area.

The company has filed a registration statement with the SEC providing for the registration for public offering of 400,000 shares of additional common stock. The proceeds from this sale would be combined with the sale to the Equitable Life Assurance Society of the United States, of $15,000,000 in debentures to provide the funds for building the plant.

Equipment Values!

PIPE LAYER — "Caterpillar" Diesel D6 Tractor, serial #4R1164SP, with Trackson MD6 Pipe Layer, equipped with front pull hook, crankcase guard, 18" track shoes and counterweights. Checked over, cleaned, painted and ready for work. FOB Louisville **$7,300.00**
MOTOR GRADER — "Caterpillar" Diesel No. 12, ser. #9K4610, leaning front wheels, 12 ft. moldboard and scarifier, less teeth, mounted on four 13.00x24 rear tires, two 7.50x24 front tires. Completely gone over, cleaned, painted. FOB Louisville. **$6,450.00**
SCRAPER — "Caterpillar" Model 80, ser. #2D2195; 24.00x29 oversized rear tires, 21.00x24 front tires and pusher block. Only a few weeks old and a great buy at this price. FOB Paducah, Ky. **$10,750.00**
TRACTOR-DOZER — "Caterpillar" Diesel D6, serial #5R131. Standard gauge tractor with LaPlant-Choate hyd. straight dozer. "Buy and Try"—you be the judge. FOB Louisville **$5,275.00**
ENGINE-POWER UNIT — International UD18A, ser. #2UP-12670, 100 HP at 1600 RPM, equipped with open type clutch. Nearly new. FOB Louisville **$2,975.00**
TRACTOR-DOZER — "Caterpillar" Diesel D7, serial #3T642, with LeTourneau angle blade and LeTourneau DDPCU. This 80 drawbar H.P. machine has new tracks and rollers, presents an excellent appearance. FOB Paducah, Ky. **$8,385.00**

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S STATE GROUP
Alabama, Georgia, Florida, Tennessee

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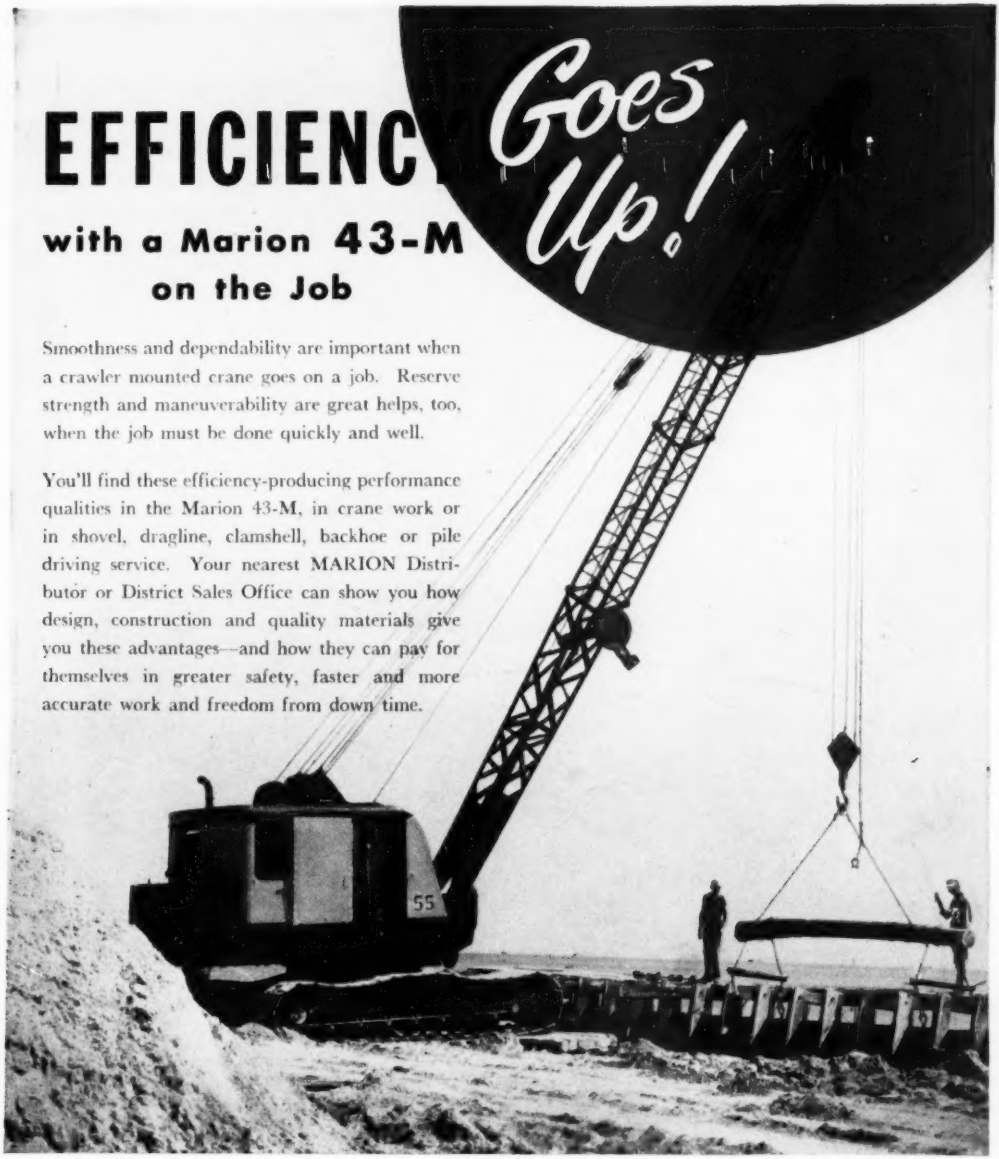

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This A-W Grader Sure Handles Oil Mix FAST!

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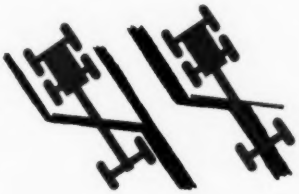
Whenever you see an Austin-Western Power Grader with its rear end off-set like this, you can be sure that it is moving more material farther and doing the job faster than an ordinary motor grader could do it. We call it "CONTROLLED TRACTION." Here's how it works:

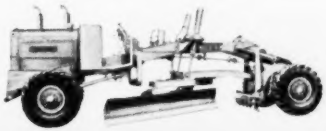
All wheels miss the windrow. The rear drivers push behind the toe of the blade; the front drivers pull ahead of the heel of the blade, and the grader moves straight ahead with a load along the entire blade that would cause an ordinary motor grader to become unmanageable.

PRECISION SIDESHIFT moves the blade in or out, as desired, while the grader is in motion. Ample throat room between top of blade and bottom of circle makes it possible to move a tremendous windrow without interference. The lay-down is handled with the precision that satisfies the most critical engineer.



On the ordinary motor grader, the operator has two alternatives; split the windrow and move less material, or straddle the windrow and not move it the full distance. Each of these procedures slows down the job.

CONTROLLED TRACTION puts the rear end of the machine where it will most effectively resist the side-thrust of the load on the blade . . . saves time and money on a wide variety of grading and ditching jobs. Only Austin-Western has CONTROLLED TRACTION . . . because only Austin-Western has All-Wheel Drive and All-Wheel Steer.



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